



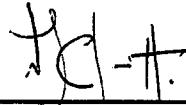
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**MW-19/HOT SPOT 1 AREA
REMEDIAL INVESTIGATION REPORT**

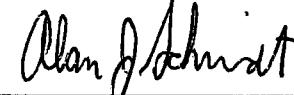
**L.E.CARPENTER & COMPANY
WARTON, NEW JERSEY
USEPA ID# NJD002168748**

March 2000



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Section 1

Introduction & Background

1.1 Introduction

L.E. Carpenter & Company (LEC) has been conducting subsurface investigation and remedial action activities at their facility located at 170 North Main Street in Wharton, New Jersey (Figure 1), in accordance with the New Jersey Department of Environmental Protection (NJDEP) Amended Administrative Consent Order (ACO) issued in 1986. Subsurface investigations and remedial action activities performed at the facility since that time have included the advancement of soil borings, the installation of groundwater monitoring wells, soil, sediment and groundwater sampling activities, and the installation of a free-product recovery system to facilitate the monthly mobile enhanced fluid recovery (EFR) events that began in November 1997. In April 1994 the NJDEP issued a Record of Decision (ROD) for the LEC site. The ROD summarized the results of the remedial investigation (RI) and the baseline risk assessment, outlined feasible remedial alternatives (FS), and presented the selected remedy (ROD Alternative No. 4 – Treatment of Groundwater with Reinfiltration and Soil Bioremediation). The ROD required the remediation of groundwater and excavation and disposal of "hot spot" soils.

Certain "hot spot" areas have been addressed, however, there are a number of areas on site that are still undergoing further investigation and corrective action. One of these areas is the MW-19/Hot Spot 1 area (MW19/HS1). Historically these two areas have been reported separately. For the purposes of this report, and from this point forward, these two areas will be combined and reported as one distinct site location. A site plan showing the location of the combined MW19/HS1 area is presented as Figure 2.

Detailed documentation of historical investigative and remedial actions specific to the MW19/HS1 area can be referenced in the following reports: Report of Revised Remedial Investigation Findings Volume I (GeoEngineering and Roy F. Weston, June 1990); Final Technical Report For Tank Removal Operations (Weston Services, Inc., September 1991); Final Supplemental Remedial Investigation Addendum Report (Roy F. Weston, September 1992); Quarterly Progress Report (Roy F. Weston, April 1995); Second Quarter 1996 Progress Report (Roy F. Weston, August 1996); the Fourth Quarter 1997 Groundwater Monitoring Report (RMT, Inc., April 1998); both Hot Spot 1 and MW19 Delineation Reports (RMT, Inc., June 1998); and MW-19/Hot Spot 1 Off-Site Subsurface Investigation (RMT, Inc., June 1999).

1.2 MW19/Hot Spot 1 Nature and Extent of Contamination based on Historical Remedial Investigation and Action

The MW19/HS1 area is located immediately west of Building 9 and is associated with two former 10,000-gallon underground storage tanks (UST E-3 and UST E-4) which contained methyl ethyl ketone (MEK) and waste MEK and waste pigments. In accordance with the 1986 ACO, GeoEngineering, Inc. and Roy F. Weston (Weston) conducted a site-wide Remedial Investigation (RI) and separated the LEC site into three areas. The MW19/HS1 area was classified as Area III. Four (4) test pits (TP-63 to TP-66) were excavated around the two USTs. Soil samples were collected from immediately above the water table (between 7 feet and 9 feet below ground surface, bgs) and analyzed for volatile organic compounds (VOCs), base neutral organics (BNO), and priority pollutant metals. No VOCs were detected above quantification limits and residual concentrations of cadmium were detected in TP-63. However, test pit sample results did identify elevated concentrations of one base neutral organic (BNO): bis (2-ethylhexyl) phthalate (DEHP). Subsequently, DEHP was identified as the MW19/HS1 area contaminant of concern.

USTs E-3 and E-4 and visually impacted soil surrounding the USTs were removed from the site in 1991. A detailed account of site UST removal activities is presented in the Final Technical Report for Tank Removal Operations (Weston Services, Inc., September 1991). In 1991, after tank removal activities had been completed, Weston installed groundwater monitoring well MW-19 in the area immediately adjacent to the excavation to determine whether groundwater had been impacted by previous operations conducted at the facility. The results of the groundwater sampling activities conducted at that time did not identify the presence of VOCs at concentrations above the method detection limits with the exception of 2-Butanone (MEK).

In November 1994, Weston began the excavation of remaining DEHP impacted soils in the MW19/HS1 area. The final size of the excavation was approximately 70 feet long, ranged from 16 to 33 feet in width, and had an average depth of 9 feet bgs. Concentrations of DEHP in the sidewall samples ranged from 0.24 mg/kg to 140 mg/kg. Approximately 190 cubic yards of soil were removed from the excavation. Quarterly groundwater sampling events conducted at MW-19 by Weston during first and second quarter 1995 identified the presence of benzene, toluene, ethylbenzene, and xylene (BTEX), in addition to MEK, at concentrations exceeding the NJ Groundwater Quality Criteria (NJGQC) stipulated in the ROD. In October 1996, Weston submitted a delineation plan to the NJDEP to further define the extent of VOC impact to groundwater and further delineate both VOC and DEHP impact to saturated and non-saturated soils and groundwater in the MW19/HS1 area. Nine (9) temporary monitoring wells (BW-1 through BW-9) were installed and sampled and soil samples were collected and analyzed. The

results of chemical analyses performed on the groundwater samples collected from the temporary monitoring wells identified the presence of VOCs at concentrations similar to those identified in monitoring well MW-19 in 1995. Additionally, the soil samples collected at both B3 and B2A indicated DEHP concentrations of 790 mg/kg and 220 mg/kg respectively, exceeding the Impact to Groundwater Soil Cleanup Objective of 100 mg/kg outlined in the ROD.

RMT received NJDEP approval of an additional MW19/HS1 area groundwater delineation plan in January 1998. Subsequently, in February 1998, RMT conducted a subsurface investigation that included the installation and sampling of an additional five (5) groundwater monitoring wells (MW19-1 through MW-19-5). VOC concentrations exceeding the NJGQC were identified at MW19-1 (center of the plume); MW19-2; MW19 and at MW19-5. However, when compared to the VOC concentrations found during Weston's 1996 sampling (BW-1 through BW-9), significant reductions in the concentrations of VOCs were found at monitoring wells MW19 and MW19-2. As no remedial action had been performed (other than the 1994 soils excavation), it was concluded that natural attenuation of the volatile groundwater contaminants (toluene, ethylbenzene, xylene) was likely occurring. Groundwater samples were also analyzed for the presence of DEHP. DEHP concentrations exceeding NJGQC were found at MW19-1 (center of the plume) and at MW19-5 (downgradient well).

The NJDEP letter dated July 15, 1998 required LEC to further delineate the downgradient extent of BTEX and DEHP impact to groundwater in the MW19/HS1 area and establish a clean zone for both parameters per the Technical Requirements for Site Remediation (N.J.A.C. 7:26E-4.4). RMT, on behalf of LEC, prepared an investigation workplan and submitted it to the NJDEP in November 1998. Per discussions and correspondence with the NJDEP (December 21, 1998), RMT was authorized to perform a groundwater screening investigation utilizing Hydropunch® or other similar methodology.

Hydropunch® sampling activities were performed on April 21, 1999; however, the subcontractor encountered significant difficulties advancing the Hydropunch® tool in the permitted off-site sample locations due to the existence of dense glacial till at approximately 6-14 feet bgs. A total of 24 off-site advancement attempts were made, four (4) of which penetrated the water table (11 to 13 feet bgs). Extracted groundwater samples from each of the four successful Hydropunch® locations were analyzed for BTEX (EPA Method 602) and DEHP (EPA Method 625). BTEX were not detected in any of the samples. DEHP was detected in samples collected from Hydropunch® locationis HP-2 and HP-3, but the values were estimated and DEHP was also detected in the blank. No BTEX or DEHP concentrations exceeded NJGQC.

RMT's report entitled MW19/HS1 Off-Site Subsurface Investigation documenting the Hydropunch® installation and sampling activities was submitted to the NJDEP in June 1999. The NJDEP issued comments regarding the results of this investigation in their letter dated July 23, 1999. The NJDEP required the installation of additional groundwater monitoring wells downgradient from the MW19/HS1 area because the four Hydropunch® wells installed in April 1999 were not considered truly downgradient of the known contaminant plume. As indicated previously, optimal downgradient locations could not be sampled because of subsurface refusal. Subsequently, RMT prepared a workplan entitled Further Off-Site Groundwater Investigation at MW19/Hot Spot 1 (August 1999), and submitted it to the NJDEP for review. The NJDEP and the United States Environmental Protection Agency (USEPA) Region II approved the workplan on September 30, 1999. A copy of the workplan approval letter provided by the NJDEP is presented as Appendix A. The work scope described in the workplan was performed during October 1999.

1.3 Purpose and Scope of Work

The purpose of this Remedial Investigation Report (RIR) is to address the NJDEP/USEPA concerns regarding the downgradient extent of BTEX and DEHP impact to shallow groundwater in the vicinity of the MW-19/Hot Spot 1 area by presenting the results of the November 1999 groundwater investigation performed by RMT.

The scope of work included the installation, development, professional surveying, and sampling of three (3) permanent downgradient monitoring wells to establish a clean zone for both BTEX and DEHP per the Technical Requirements for Site Remediation (N.J.A.C. 7:26E-4.4). The scope of work conducted by RMT included the following tasks:

- Obtain three Road Opening Requests from the Borough of Wharton to permit the off-site installation of three permanent monitoring wells.
- Coordinate, observe, and document the installation, and development of three permanent monitoring wells (MW-19-6, MW-19-7, and MW19-8) to delineate BTEX and DEHP impact to shallow groundwater downgradient of the MW19/HS1 area.
- Restore all installation areas back to their original condition.

This report has been certified as in accordance with requirements outlined in N.J.A.C 7:26E-1.5(a). This certification is presented as Appendix B.

Section 2

MW19/HS1 Investigation

Monitoring well installation activities were conducted on October 28 and October 29, 1999 and included the installation of three permanent groundwater monitoring wells (MW-19-6, MW-19-7, and MW-19-8), downgradient of the MW19/HS1 area located adjacent to Building 9. NJDEP well permits were obtained on October 18, 1999, prior to the commencement of well installation activities (Appendix C). Prior to drilling, site personnel in the field located utilities, and New Jersey One Call was notified to identify and mark existing utilities. Mark-Out/Dig # 992951048 was assigned to the well installation project on October 22, 1999. The methods and procedures used to conduct the field activities are presented in the following sections and the locations of the groundwater monitoring wells are presented in Figure 3.

2.1 Road Opening Permits

RMT submitted an application package to the Borough of Wharton on March 22, 1999 to request approval for the installation of the Hydropunch® apparatus. The Borough provided written approval for the off-site investigation on April 7, 1999 (Permit No. OP-99-4). After contacting Mr. Bill Skewes, Village of Wharton Planning Department, RMT was authorized to install the three new wells under the existing April 7, 1999 permit. Copies of both the permit application and permit are presented as Appendix H in RMT's report entitled MW19/HS1 Off-Site Subsurface Investigation (June 1999).

2.2 24-Inch Sanitary Sewer Evaluation

As previously mentioned all utilities in the MW19/HS1 area were located prior to the commencement of well installation activities to minimize the potential for inadvertent utility damage. In addition to locating the utilities, RMT, on behalf of LEC, contacted the Village of Wharton to obtain construction drawings for the 24-inch sanitary sewer line that currently runs from west to east on the north side of Ross Street. The sanitary sewer was installed in May 1979 at depths ranging from approximately 11 to 12 feet bgs between manhole 16 (M.H. W-16) and manhole 15 (M.H. W-15). A plan and profile for this sewer line is presented as Appendix D. Precisely locating this sewer and evaluating its construction and depth was critical in determining: 1) if the sewer line and it's surrounding fill material had the potential to interface with shallow groundwater, and 2) an appropriate location for the downgradient wells. As shallow groundwater in the MW19/HS1 area exists at depths ranging from 9.55 feet to 12.92 feet bgs, a hydraulic connection between the shallow groundwater table and the sanitary sewer

utility corridor could potentially exist. Additionally, Hydropunch® locations HP-1, HP-2 and HP-3 were installed downgradient of the sanitary sewer (based on a northeasterly groundwater flow direction), and the analytical results from all three Hydropunch® locations did not reveal concentrations for BTEX or DEHP above Class IIa NJGQC.

As the analytical results from HP-1, HP-2 and HP-3 may have potentially exhibited lower concentrations due to shallow groundwater movement across the utility corridor; RMT installed MW19-8 upgradient of the sewer, approximately 50-feet further downgradient from MW19-6 and MW19-7.

2.3 Monitoring Well Installation and Development

All monitoring wells were installed in accordance with procedures outlined in the NJDEP's Field Sampling Procedures Manual (Appendix 7-1(B) Monitor Well Requirements for Unconsolidated Aquifers), dated 1992. All monitoring wells were installed using a B-80 air rotary hammer drill rig. Each of the groundwater monitoring wells were installed in soil borings to depths of approximately 20 feet bgs and screened between 10 to 20 feet bgs. Continuous split spoon sampling was conducted to characterize geology. All three monitoring wells were constructed of 10-foot long 2-inch diameter stainless steel screen (0.020 slot size) and stainless steel riser. For each of the wells, a Morie #2 Gravel pack was used as a filter pack around each monitoring well screen and extended above the top of the screened interval approximately two feet. A Neat Cement Grout (ATSM Type II, w/5% Bentonite) was used to backfill the annular space from the top of the gravel packs to the ground surface. All monitoring wells were installed with AT-Grade protective watertight manholes and locking compression caps. Each manhole was sealed to grade with a 2-feet by 2-feet square Portland cement concrete pad. Well logs and monitoring well records for all three monitoring wells showing construction details and soils characterization information are presented in Appendix E.

After monitoring well construction activities were completed, the monitoring wells were developed with a displacement pump, until the extracted purge water was relatively clear and sediment-free. Each well was developed for a period of 0.5 hours at a purge rate of 3 gallons per minute (gpm) (approximately 90 gallons per well).

2.4 Investigation Derived Wastes

Drill cuttings were contained in 55-gallon Department of Transportation (DOT) approved drums, labeled with the date, generators name, site location and source, and stored at the L.E. Carpenter facility pending chemical analyses and disposal.

Well development and decontamination waters were stored in 55-gallon DOT drums and staged on site pending transportation and disposal during the next month's EFR event (November 1999).

Section 3

Groundwater Monitoring Activities

Groundwater monitoring activities were performed in accordance with procedures outlined in the NJDEP's Field Sampling Procedures Manual, dated 1992. These activities included having all three monitoring wells professionally surveyed, purging each well prior to sampling, measuring certain field parameters before and after purging and after sampling, and obtaining groundwater samples from each monitoring well and analyzing each sample for BTEX and DEHP.

Whole section KAC 10/14/01

3.1 Professional Well Survey

All three monitoring wells were surveyed by RECON, Inc., a professional surveyor located in Whippany, New Jersey (License Number 12808), on November 30, 1999. RECON established the geodetic location of each well, and measured ground surface, outer casing and inner well elevations. A copy of the revised RECON Survey Map for the LEC site is presented as Appendix F. As shown on the revised RECON survey map, MW19-6 and MW19-7 were installed on the LEC property line, and MW19-8 was installed in Ross Street, slightly north of the existing easement.

3.2 Groundwater Sample Collection

Custom Environmental Management Company (CEMCO) sampled all three wells on November 15, 1999. Prior to collecting the samples, the wells were slow purged by removing three to five well volumes using a peristaltic pump. The pH, temperature, dissolved oxygen, and conductivity of the extracted groundwater were measured and recorded. All groundwater samples were collected using dedicated Teflon bailers. Monitoring well data collected during groundwater sample collection is presented as Appendix G.

3.3 Shallow Groundwater Evaluation

The results of the monitoring well static water level measurement and groundwater sampling activities are presented in the following sections.

3.3.1 Shallow Groundwater Elevation and Flow Direction

Static water level measurements collected during the initial sampling of monitoring wells MW19-6, MW19-7 and MW19-8, in addition elevation data collected during 4th

quarter 1999 at existing MW19/HS1 wells (MW19, MW19-1, MW19-2, MW19-3, MW19-4 and MW19-5), were used to determine the localized groundwater flow direction.

Water table elevation measurements indicate that shallow groundwater in this area of the site is flowing in a northeasterly direction as displayed on Figure 4. Groundwater is flowing under a hydraulic gradient of approximately 0.007 ft/ft, which is typical for the sandy, gravelly materials seen at the site. The groundwater flow direction and hydraulic gradient appear to be consistent with shallow water table flow patterns historically observed at the site. Elevation data utilized in this investigation is presented in Table 1.

3.3.2 Chemical Analysis of Groundwater

As previously mentioned, groundwater samples collected from MW19-6, MW19-7 and MW19-8 on November 15, 1999 were submitted to STL Envirotech, an EPA certified laboratory located in Edison, New Jersey, and subjected to BTEX (USEPA Method 602) and DEHP (USEPA Method 625) analyses. In addition, the April 1998 groundwater analytical data for MW19, MW19-1, MW19-2, MW19-3, MW19-4 and MW19-5, and the analytical data for the four Hydropunch® temporary well locations (HP-1 through HP-4) installed in April 1999 were used to establish the extent of BTEX and DEHP impact to the shallow groundwater existing at other locations within and adjacent to the MW19/HS1 area. A copy of the STL Envirotech laboratory report is presented as Appendix H. Analytical results received for MW19-6, MW19-7 and MW19-8 are summarized in Table 2.

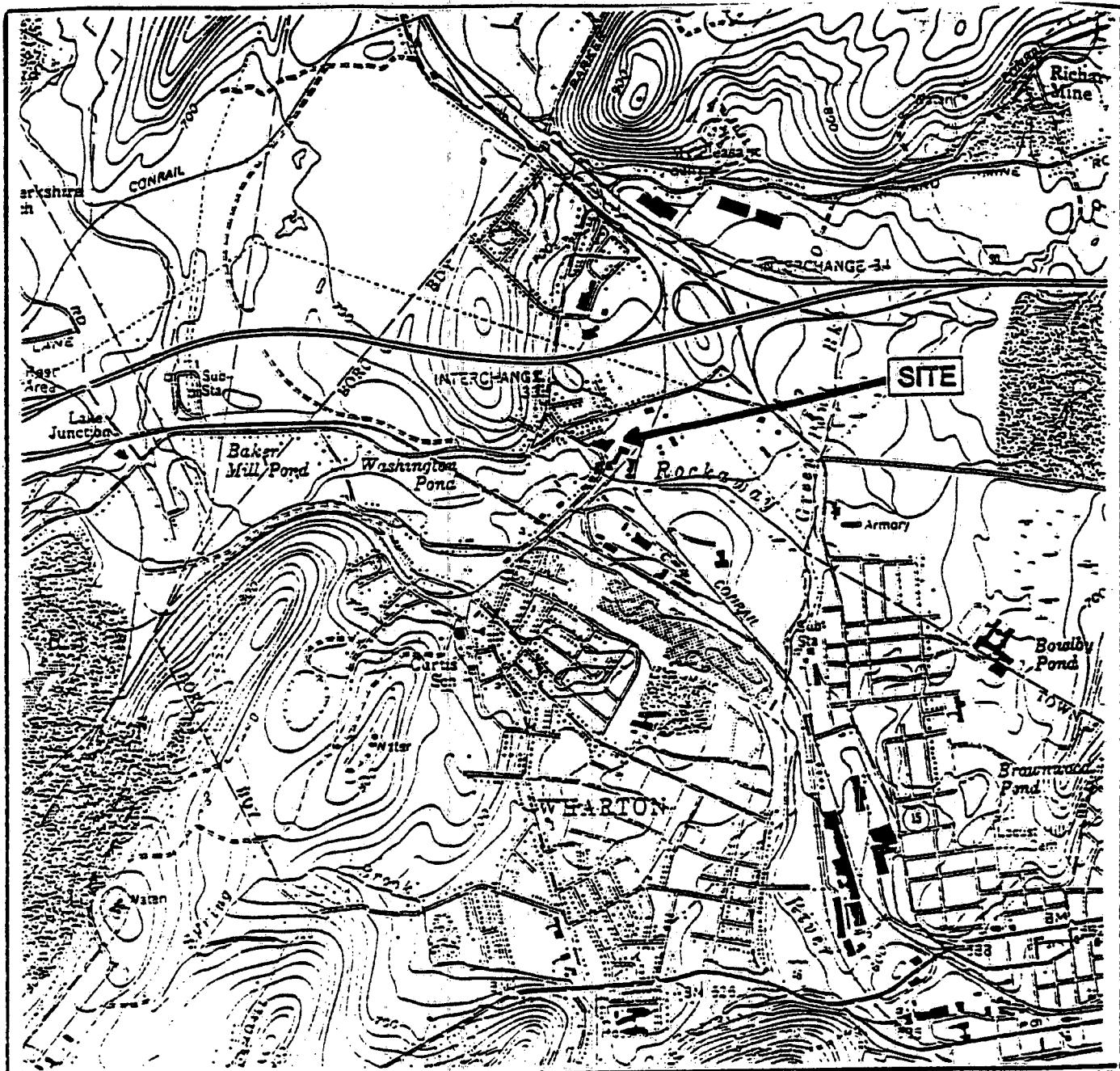
Benzene was not detected above method detection limits at any of the three wells with the exception of the duplicate sample (MW19-9) collected from MW19-7. However, benzene historically has not been detected in the MW19/HS1 area above method detection limits. Total xylenes were detected at a concentration exceeding the Class IIa NJGQC of 1,000 µg/L at MW19-7 (1,400 µg/L). Toluene was detected at a concentration exceeding the Class IIa NJGQC of 1,000 µg/L at MW19-6 (3,400 µg/L). MW19-8 did not reveal concentrations of BTEX or DEHP above method detection levels, which are well below the Class IIa NJGQC. BTEX and DEHP concentrations at all monitoring wells (MW19 Series Wells 1 through 8) and Hydropunch® temporary well locations (HP-1 through HP-4) are shown on Figure 5. Additionally, the lateral extent of the BTEX and DEHP plumes existing in the shallow groundwater underlying the MW19/HS1 area are depicted on Figure 6.

Section 4

Summary and Conclusions

The February 1998 (MW19-1 through MW19-5), April 1999 (Hydropunch® installations) and November 1999 (MW19-6 through MW19-8) shallow groundwater investigation events indicate that shallow groundwater within the MW19/HS1 area is impacted with both BETX and DEHP above Class IIa NJGQC at monitoring wells located in (MW19-1) and near (MW-19 and MW-19-2) the source area, and in downgradient monitoring wells MW-19-5, MW19-6 and MW19-7. Reference Figure 6 for the area extent of BTEX and DEHP Plumes

In summary, the February 1998, April 1999 and November 1999 remedial investigations have established a shallow groundwater clean zone for both BTEX and DEHP per the Technical Requirements for Site Remediation (N.J.A.C. 7:26E-4.4). Subsequently, RMT, on behalf of LEC, requests no further groundwater investigation be conducted within and downgradient from the MW19/HS1 area.



0 2000 4000
SCALE: 1"-2000'



SITE LOCATOR MAP
LE CARPENTER
WHARTON, NEW JERSEY

QUADRANGLE LOCATION

SOURCE: BASE MAP FROM DOVER,
NEW JERSEY, 7.5 MINUTE USGS
QUADRANGLE, DATED 1981.

 INC.	OWN. BY: DFL
	APPROVED BY:
	DATE: APRIL 1998
	PROJ. # 3862.02
	FILE # 38620208

FIGURE 1

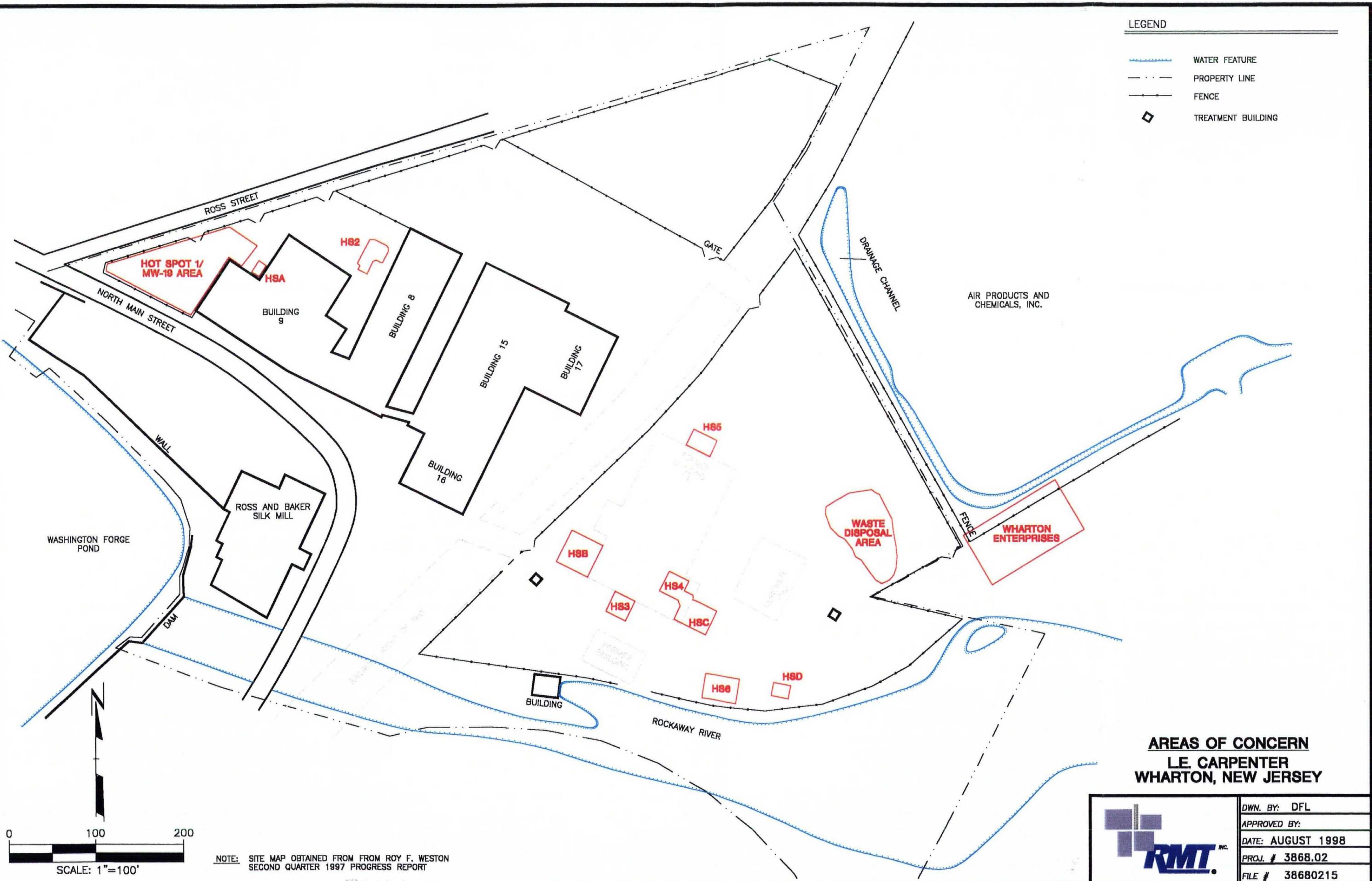


FIGURE 2

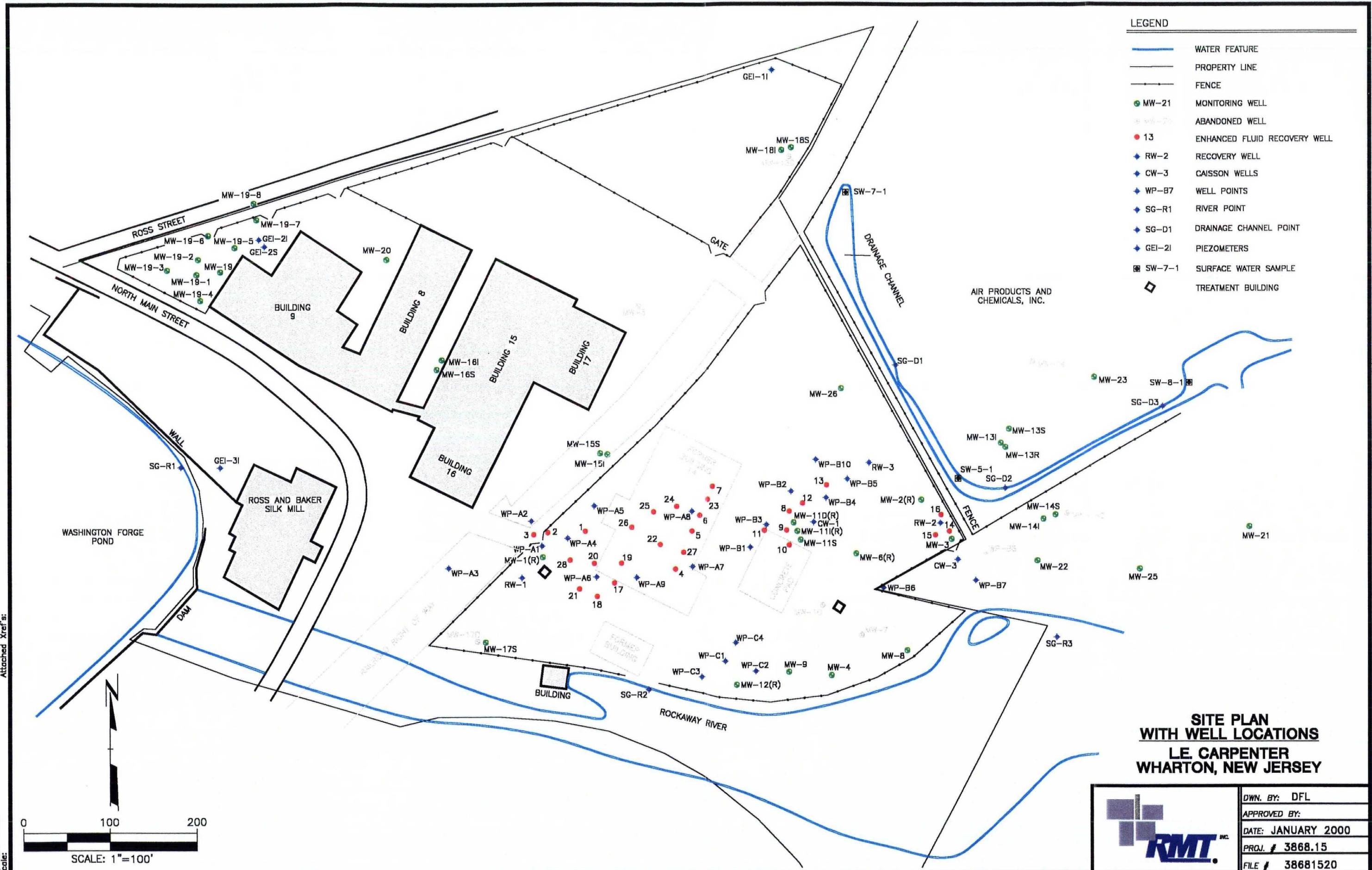


FIGURE 3

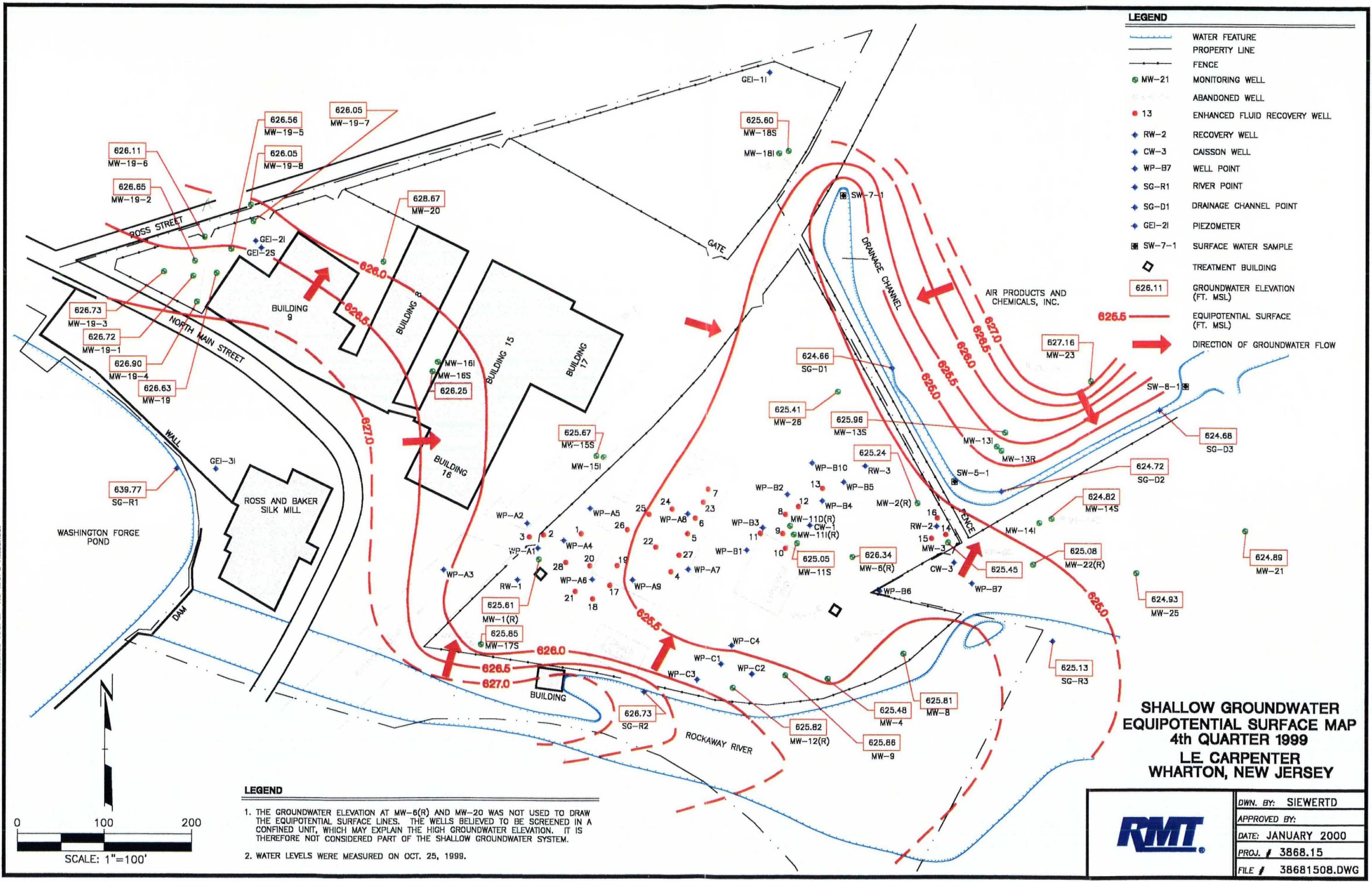
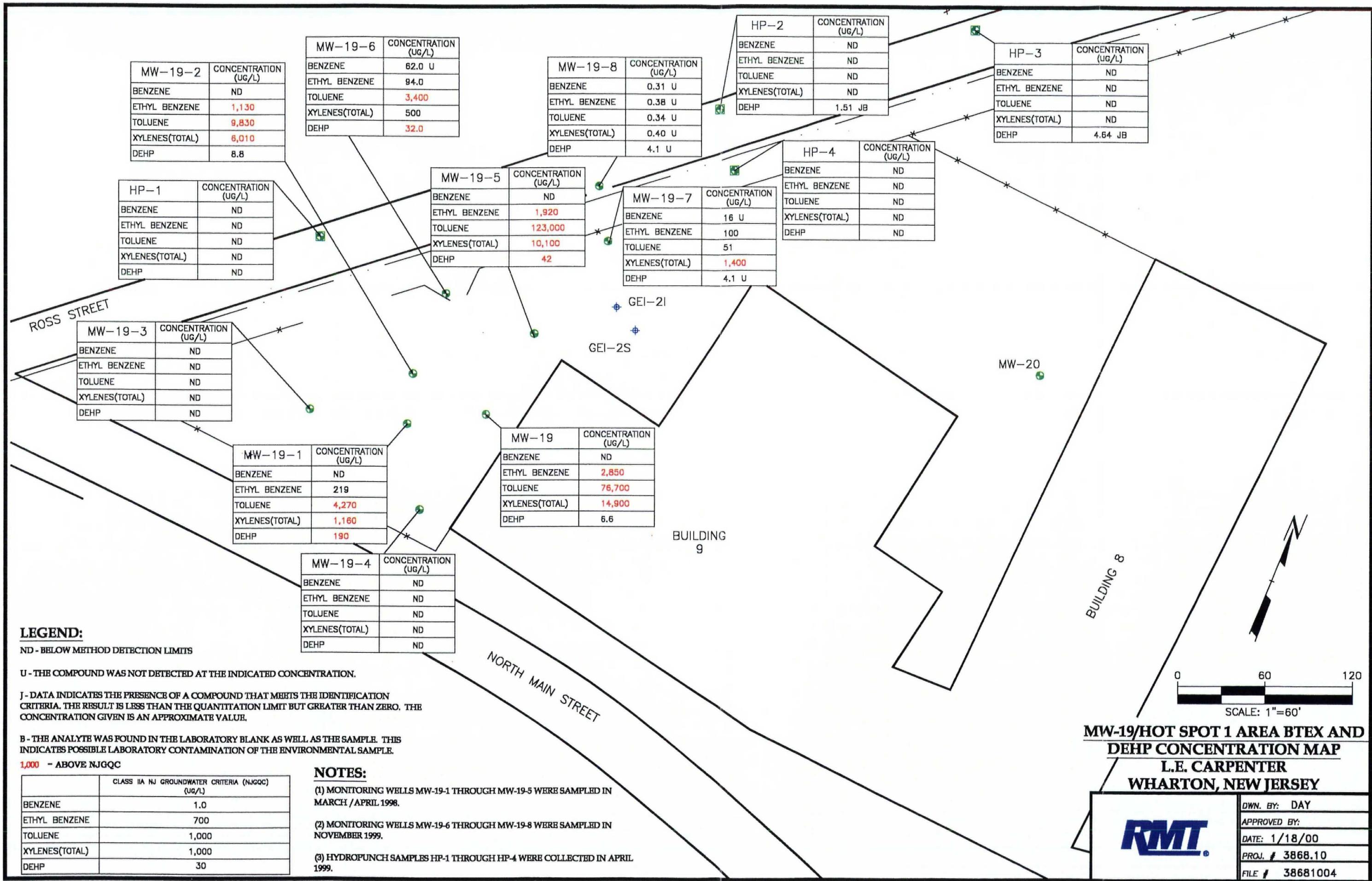


FIGURE 4



MW-19/HOT SPOT 1 AREA BTEX AND DEHP CONCENTRATION MAP
L.E. CARPENTER
WHARTON, NEW JERSEY

RMT

DWN. BY: DAY
APPROVED BY:
DATE: 1/18/00
PROJ. # 3868.10
FILE # 38681004

FIGURE 5

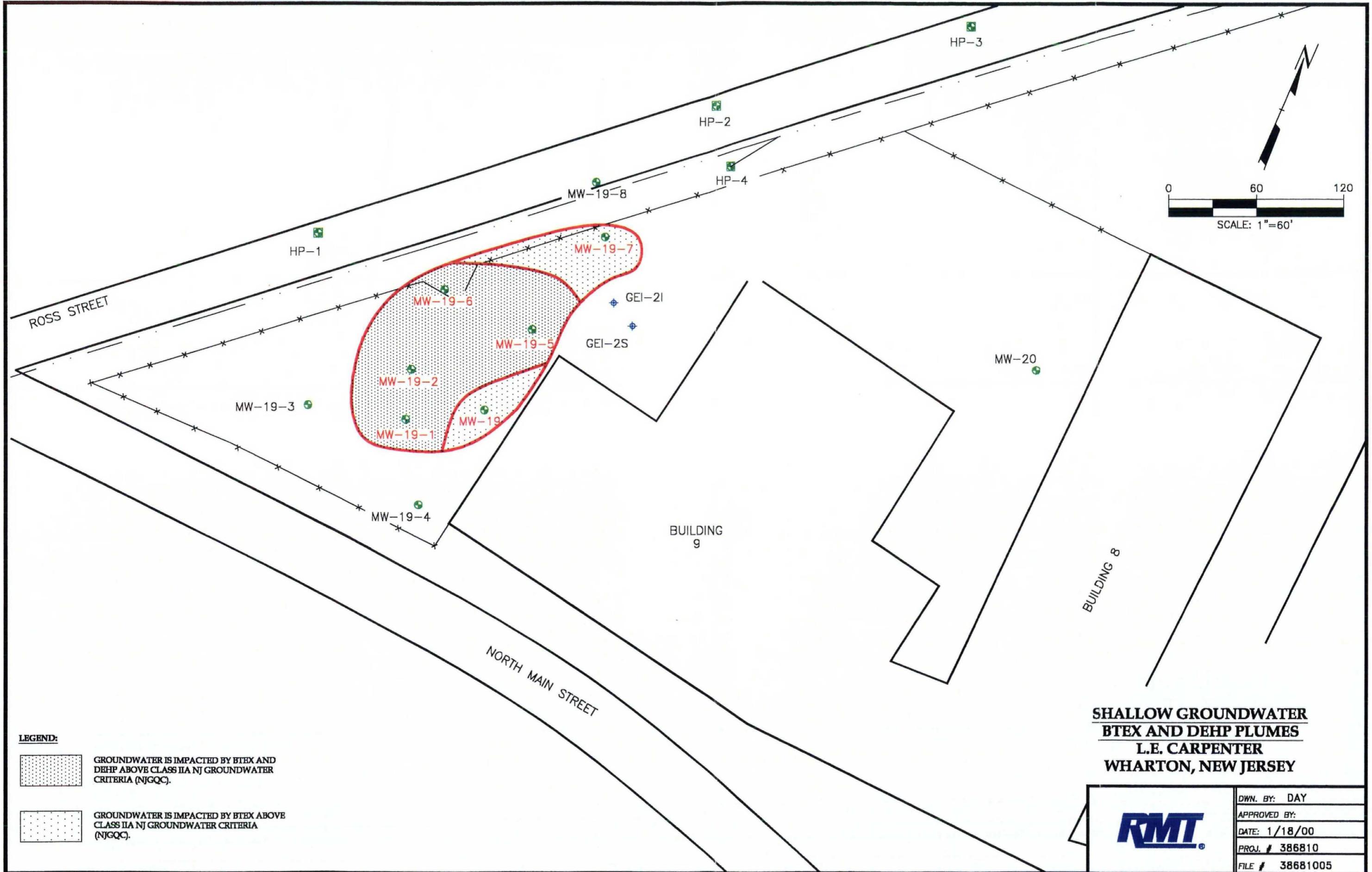


FIGURE 6

TABLE 1
MW19/HOT SPOT 1
Groundwater Elevations

WELL LOCATION	WELL INSTALLATION INFORMATION										GEODETIC LOCATION		ELEVATIONS			STATIC WATER LEVEL MEASUREMENT INFORMATION						
	MANAGING CONSULTANT	INSTALLATION DATE	TOTAL WELL DEPTH (FT)	WELL DIAMETER (IN)	SCREEN MATERIAL	SLOT SIZE (IN)	TOP OF SCREEN (FT)	BOTTOM OF SCREEN (FT)	SCREENED INTERVAL (FT)	AQUIFER SYSTEM	LATITUDE	LONGITUDE	GROUND	OUTER CASING	INNER WELL	MEAS. DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS (ft)	CORRECTED WATER LEVEL ELEVATIONS
MW-19	ROY F. WESTON	May 20, 1991	17.00	4.00	STEEL	0.02	7.00	17.00	10.00	S	40° 54' 17.1"	74° 34' 43.7"	636.72	639.24	638.88	25-Oct-99	-	12.25	-	626.63	-	-
MW-19-1	RMT, INC.	February 17, 1998	17.00	4.00	STEEL	0.01	6.00	15.50	9.50	S	40° 54' 17.0"	74° 34' 44.0"	636.50	639.26	638.86	25-Oct-99	-	12.14	-	626.72	-	-
MW-19-2	RMT, INC.	February 17, 1998	16.00	4.00	STEEL	0.01	6.00	16.00	10.00	S	40° 54' 17.2"	74° 34' 44.0"	637.05	639.36	638.76	25-Oct-99	-	12.11	-	626.65	-	-
MW-19-3	RMT, INC.	February 18, 1998	16.00	4.00	STEEL	0.01	6.00	15.50	9.50	S	40° 54' 17.1"	74° 34' 44.5"	637.54	640.04	639.65	25-Oct-99	-	12.92	-	626.73	-	-
MW-19-4	RMT, INC.	February 18, 1998	16.00	4.00	STEEL	0.01	6.00	15.50	9.50	S	40° 54' 16.7"	74° 34' 44.0"	636.27	638.44	637.74	25-Oct-99	-	10.84	-	626.90	-	-
MW-19-5	RMT, INC.	February 18, 1998	16.00	2.00	PVC	0.01	6.00	15.50	9.50	S	40° 54' 17.3"	74° 34' 43.5"	636.39	639.07	638.74	25-Oct-99	-	12.18	-	626.56	-	-
MW-19-6 ⁽¹⁾	RMT, INC.	October 28, 1999	20.00	2.00	STEEL	0.02	10.00	20.00	10.00	S	40° 54' 17.5"	74° 34' 43.8"	636.78	636.78	636.44	15-Nov-99	-	10.33	-	626.11	-	-
MW-19-7 ⁽¹⁾	RMT, INC.	October 29, 1999	20.00	2.00	STEEL	0.02	10.00	20.00	10.00	S	40° 54' 17.6"	74° 34' 43.1"	636.00	636.00	635.60	15-Nov-99	-	9.55	-	626.05	-	-
MW-19-8 ⁽¹⁾	RMT, INC.	October 28, 1999	20.00	2.00	STEEL	0.02	11.00	20.00	9.00	S	40° 54' 17.8"	74° 34' 43.2"	636.44	636.44	635.96	15-Nov-99	-	9.91	-	626.05	-	-

(1) Wells included in the quarterly sampling program and new wells installed due to RI efforts. Water depth recorded before purging

- : Value of 0.00. Free Product no encountered at well

S: Shallow Aquifer System

I: Intermediate Aquifer System

D: Deep Aquifer System

TABLE 2
SUMMARY OF BTEX AND DEHP ANALYTICAL RESULTS
MW19-6, MW19-7 and MW19-8
USEPA METHODS 602 (GC/PID) AND 625 (GC/MS)

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	ROD Discharge Criteria (ug/l)	New Jersey Higher of PQLs and Class IIa NJ Ground Water Quality Criteria (NJGQC) (ug/l)	DUPLICATE OF MW19-7					
			19-8 169024 11/15/99 WATER 1.0 ug/L	19-7 169025 11/15/99 WATER 50.0 ug/L	19-9 169026 11/15/99 WATER 25.0 ug/L	19-6 169027 11/15/99 WATER 200.0 ug/L	Field_Blank 169028 11/15/99 WATER 1.0 ug/L	Trip_Blank 169029 11/12/99 WATER 1.0 ug/L
VOLATILE COMPOUNDS (GC)								
Benzene	1	1	0.31 U	16 U	13	62 U	0.31 U	0.31 U
Toluene	500	1,000	0.34 U	51	51	3400	0.34 U	0.34 U
Ethylbenzene	350	700	0.38 U	100	110	94	0.38 U	0.38 U
Xylene(Total)	20	1000^	0.40 U	1400	1300	500	0.40 U	0.40 U

[^] Value is a revision to the Class IIa ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NR - Not analyzed.

1300 Indicates that concentration exceeds Class IIa NJGQC

MW19-7 Duplicate sample of MW19-7

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor Units	ROD Discharge Criteria (ug/l)	New Jersey Higher of PQLs and Class IIa NJ Ground Water Quality Criteria (NJGQC) (ug/l)	DUPLICATE OF MW19-7					
			19-8 169024 11/15/99 WATER 1.0 ug/L	19-7 169025 11/15/99 WATER 1.0 ug/L	19-9 169026 11/15/99 WATER 1.0 ug/L	19-6 169027 11/15/99 WATER 1.0 ug/L	Field_Blank 169028 11/15/99 WATER 1.0 ug/L	Trip_Blank 169029 11/12/99 WATER 1.0 ug/L
SEMIVOLATILE COMPOUNDS (GC/MS)								
bis(2-Ethylhexyl)phthalate (DEHP)	30	30	4.1 U	4.1 U	4.1 U	32	4.2 U	NR
Total Confident Conc. BNAs (s)			0	0	0	32	0	
Total Estimated Conc. BNA TICs (s)			0	0	0	0	0	

(I) Values listed reflect the combined standards for the 2,4/2,6-Dinitrotoluene mixture.

[^] Value is a revision to the Class IIa ground water quality standard based upon the November 18, 1996 Safe Drinking Water Act maximum contaminant level changes and the February 5, 1997 policy memo issued by Assistant Commissioner R. Gimello.

Qualifiers

- U - The compound was not detected at the indicated concentration.
- J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.
- B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- NR - Not analyzed.

32 Indicates that concentration exceeds Class IIa NJGQC

MW19-7 Duplicate sample of MW19-7

Appendix A
NJDEP Workplan Approval Letter Dated
September 30, 1999



Christine Todd Whitman
Governor

State of New Jersey
Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

Mr. Christopher Anderson
Director, Environmental Affairs
L.E. Carpenter & Company
200 Public Square
Suite 36-5000
Cleveland, OH 44114-2304

SEP 30 1999

Dear Mr. Anderson:

Re: L.E. Carpenter Superfund Site
Wharton, Morris County

The New Jersey Department of Environmental Protection (Department) and EPA have reviewed the Workplan, Further Off-Site Groundwater Investigation at MW19/Hot Spot 1 dated August 1999. This document is approved as submitted.

Please notify the Department two weeks before field work begins. If you have any questions, please contact me at (609) 633-7261.

Sincerely,

A handwritten signature in black ink that appears to read "Gwen B. Zervas".

Gwen B. Zervas, P.E.
Case Manager
Bureau of Case Management

C: Stephen Cipit, EPA
George Blyskun, BGWPA
John Prendergast, BEERA

Appendix B

Report Certification

CERTIFICATION

In accordance with N.J.A.C. 7:26C-1.2(b):

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement, which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

In accordance with N.J.A.C. 7:26C-1.2(c):

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement, which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Mr. Christopher R. Anderson

PRINTED NAME

Director, Environmental Affairs

TITLE

L.E. Carpenter Company

COMPANY

Christopher Anderson

SIGNATURE

FEB. 22, 2000

DATE

Appendix C

Monitoring Well Permits

~ SERIAL # U1U010

DWR-133M (10/96)

Mail to

NJDEP
Bureau Water Allocation
CN 426
Trenton, NJ 08625-0426

RECEIVED

NOV 18 1999

MONITORING WELL PERMIT

STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

TRENTON, NJ

Permit No.

1553157

7553285

7553286

VALID ONLY AFTER APPROVAL BY THE D.E.P.

39

COORD #: 25.02.394

Owner LE CARPENTER COMPANY
 Address 170 N. MAIN STREET
WHARTON NJ 07885

Name of Facility _____
 Address SAME

Driller Summit Drilling Co., Inc.
 Address Central Jersey Industrial Park
Chimney Rock Road, Building 9W
Bound Brook, NJ 08805

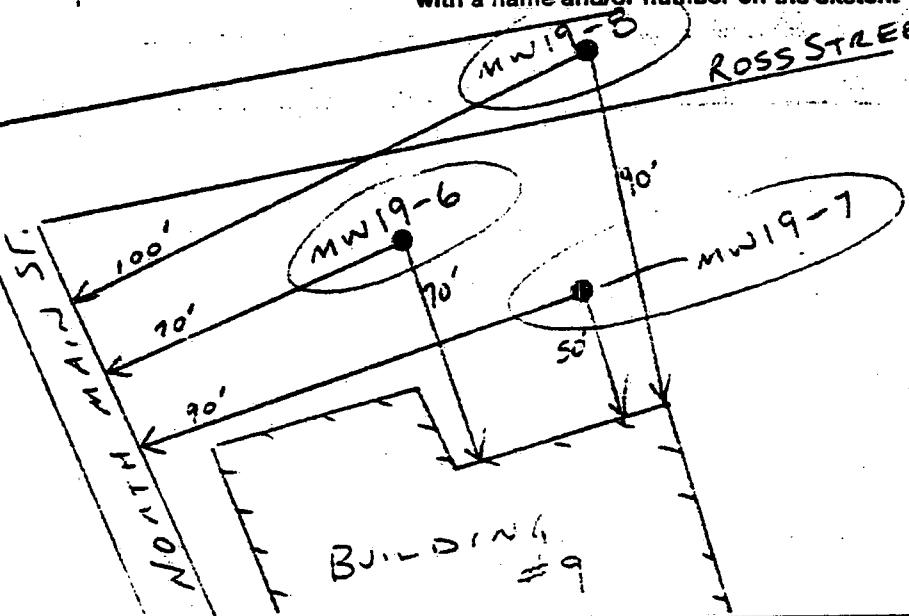
Diameter of Well(s)	2	Proposed Depth of Well(s)	20
# of Wells Applied for (max. 10)	3	Will pumping equipment be installed?	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Type of Well (see reverse)	<u>MONITORING</u>		
	If Yes, give pump capacity	cumulative GPM	

LOCATION OF WELL(S)

Lot #	2	Block #	801	Municipality	WHARTON	County	MORRIS
-------	---	---------	-----	--------------	---------	--------	--------

State Atlas Map No. 2540°56'

Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.

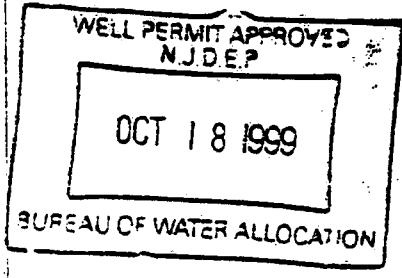


FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- Spill Site
- ISRA Site
- CERCLA (Superfund) Site
- RCRA Site
- Underground Storage Tank Site
- Operational Ground Water Permit Site
- Pretreatment and Residuals Site
- Water and Hazardous Waste Enforcement Case
- Water Supply Aquifer Test Observation Well
- Other (explain) OWNER INVESTIGATION

CASE I.D. Number _____

This Space for Approval Stamp



FOR D.E.P. USE Issuance of this permit is subject to the conditions attached. (see next page)
 For monitoring purposes only

The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT.

In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date 10-13-99

Signature of Driller

Signature of Driller John Vogt Registration No. J1544

CENCO

Signature of Owner Jeff Lux

For

Owner — White

Owner — Blue

Driller — White

COPIES:

Water Allocation — White

Health Dept. — Yellow

Appendix D

Sewer Plan and Profile

TEST PITS WILL BE REQUIRED IN THE VICINITY OF SECTION 11 AND 12 TO DETERMINE GROUND WATER CONTAMINATION LEVELS. A GROUP OF TEST PITS MAY BE PROVIDED BY THE CONTRACTOR. IF CONTAMINATED SOIL EXIST, IT MUST BE PROVIDED FROM TRENCHES OR DRAINAGE FACILITIES SHALLOW DEPOSITS OF THE EARTH'S SURFACE SIMILAR KEEPS PAYMENT UNDER ITEM 1.

PERMANENT PAVEMENT REPLACEMENT OF ROSS VALLEY SHALL CONSIST OF A 110' WIDTH SURFACE COURSE WITH PAYMENT MADE FOR THE AGGREGATE AND 7' OF PAVEMENT PLACED AS DIRECTED BY THE ENGINEER. TEMPORARY PAVEMENT SHALL BE PROVIDED AS SPECIFIED AND THE FLOOR PLAN SHEET 1 APPLICABLE.

ACCESS SHALL BE PROVIDED FOR ENTRANCE TO PIPE ALONG 30' STREET. ACCESS TO ALL DRIVEWAYS SHALL BE PROVIDED AS INDICATED.

THE CONTRACTOR SHALL MAINTAIN CONSTRUCTION AREAS OUTSIDE OF THE 30' STREET EXTRAWIDE TO THE 110' CROWN OF THE ROAD.

THE OPEN GATE RAILROAD CROSSING SHOWN SHALL BE COPIED ACCORDINGLY. ACCORDING TO THE CONTRACTOR'S DRAWINGS, THE CONTRACTOR SHALL PROVIDE A TEST PIT AS PERMITTED BY CONTRACT. PAYMENT UNDER ITEM 1.

IN GENERAL, RIGHTS-OF-WAY CONSIST OF A 25 FOOT WIDE PERMANENT WIDTH CENTERED ON THE PIPELINE(S), WITH 25 FOOT TEMPORARY CONSTRUCTION EASEMENTS PROVIDED ON EACH SIDE. THIS CONFIGURATION, HOWEVER, DOES NOT APPLY IN ALL LOCATIONS, AND WHERE DEVIATIONS EXIST, THEY HAVE BEEN NOTED IN THE PLAN SHEETS OR DETAIL BLOW-UP SHEETS. CONTRACTOR IS ADVISED TO REVIEW BOTH PLAN AND DETAIL SHEETS CAREFULLY IN THIS REGARD, IN ORDER TO EVALUATE AND MAKE ALLOWANCES WITHIN UNIT PRICES BID UNDER ITEM NO. 1 FOR RIGHT-OF-WAY RESTRICTIONS. LIMITED CLEARING WILL BE PERMITTED WITHIN THE EASEMENTS.

ALL MANHOLES IN IMPROVED AREAS ARE TO BE INSTALLED A MINIMUM OF 6' ABOVE THE GROUND SURFACE.

ENVIRONMENTAL RESTORATION ITEMS

3/21/79 3/22/79 3/23/79 3/26/79 3/27/79 3/28/79 3/28/79 5/2/79 5/3/79 5/4/79 5/7/79

E 3 b,c,g

3/27/79

3/28/79

E 3 b,c,g

3/28/79

5/2/79

5/3/79

5/4/79

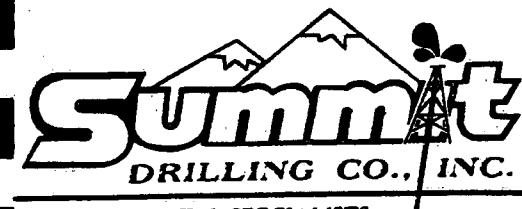
5/7/79

E 3 b,c,g

3/28/79

Appendix E

Well logs and Monitoring Well Records



ENVIRONMENTAL SPECIALISTS

Chimney Rock Road, Bldg. 9W
Bound Brook, NJ 08805
Telephone: (908) 732-4266
Toll Free: (800) 242-6648
FAX: (732) 356-1009
<http://www.summitdrilling.com>
email: info@summitdrilling.com

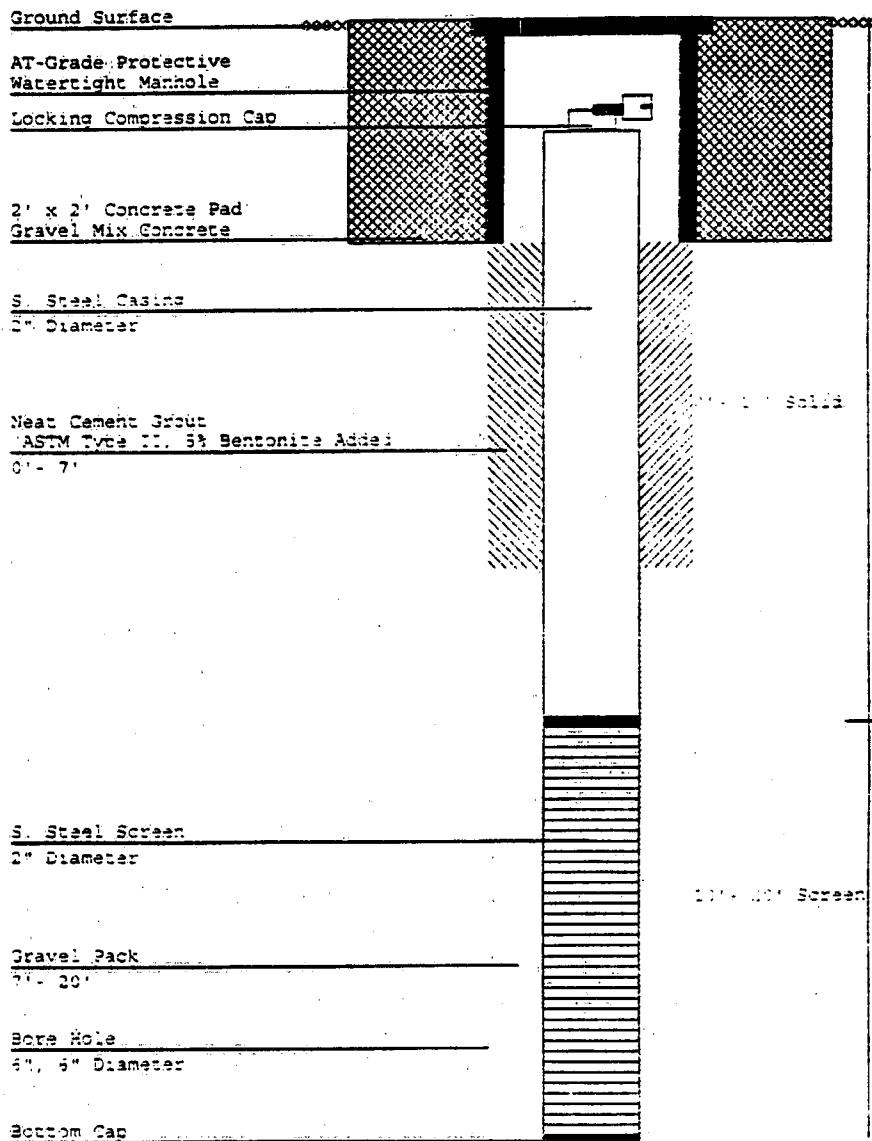
WELL LOG

WELL: MW19-6	DATE DRILLED: 10/29/1999	COORD #1: 25.02.394	PERMIT #1: 25-55284	COUNTY: Morris
		COORD #2:	PERMIT #2:	KSTREET: Ross Street
SITE: L. E. Carpenter & Co., 170 North Main St., Wharton, NJ 07885				USE: Monitoring
OWNER: L. E. Carpenter, 170 North Main Street, Wharton, NJ 07885				
INNER CASING: S. Steel	OUTER CASING:	SCREEN TYPE 1: S. Steel	DRILLING METHOD: Air Rotary	
DIAMETER: 2"	DIAMETER:	SCREEN TYPE 2:	SAMPLING METHOD:	
LENGTH: 10'	LENGTH:	DIAMETER: 2"	HOLE DIA: 6", 6"	
BET WELL: 20'	GAL PER MIN: 3	LENGTH 1: 10"	TOTAL DEPTH: 20'	
GRAVEL PK SZ: Morris #2	STAT H2O LVL: 11'	LENGTH 2:		
DRILLER: Steve Yotcoski	DEVELOPMENT METHOD: Pump	SLOT SIZE: .020	CASING SEAL: Portland	
SURFACE COMPLETION: M	DEVELOPMENT TIME: 1/2 Hour	OPEN HOLE:		

DEPTH BELOW SURFACE	BLOWS PER 6"
FROM - TO	ON SAMPLER

REMARKS / SOILS IDENTIFICATION

0'- 2' Asphalt & stone.
2'- 14' Yellow-brown medium sand & gravel some cobbles.
14'- 20' Grey m/c sand & gravel some silt trace cobbles.





ENVIRONMENTAL SPECIALISTS

Chimney Rock Road, Bldg. 9W
Bound Brook, NJ 08805
Telephone: (908) 722-4266
Toll Free: (800) 242-6648
FAX: (732) 356-1009
<http://www.summitdrilling.com>
email: info@summitdrilling.com

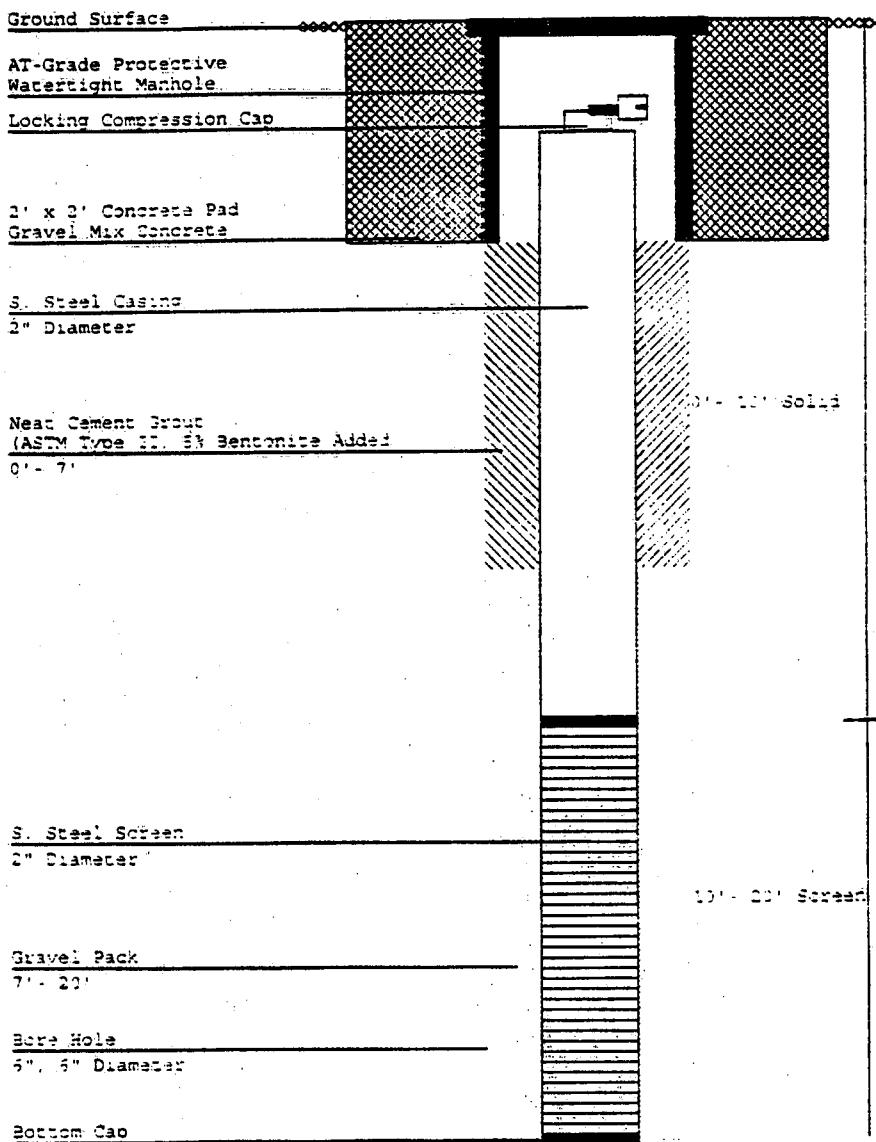
WELL LOG

WELL: MW12-7	DATE DRILLED: 10/28/1999	COORD #1: 25.02.394	PERMIT #1: 26-66295	COUNTY: Morris
		COORD #2:	PERMIT #2:	XSTREET: Ross Street
SITE: L. E. Carpenter & Co., 170 North Main St., Wharton, NJ 07885	OWNER: L. E. Carpenter, 170 North Main Street, Wharton, NJ 07885			USE: Monitoring
INNER CASING: S. Steel	OUTER CASING:	SCREEN TYPE 1: S. Steel	DRILLING METHOD: Air Rotary	
DIAMETER: 2"	DIAMETER:	SCREEN TYPE 2:	SAMPLING METHOD:	
LENGTH: 10'	LENGTH:	DIAMETER: 2"	HOLE DIA: 6", 6"	
SET WELL: 20'	GAL PER MIN: 3	LENGTH 1: 10"	TOTAL DEPTH: 20'	
GRAVEL PK SZ: Morris #2	STAT H2O LVL: 11'	LENGTH 2:		
DRILLER: Steve Yotcoski	DEVELOPMENT METHOD: Pump	SLOT SIZE: .020	CASTING SEAL: Portland	
SURFACE COMPLETION: M	DEVELOPMENT TIME: 1/2 Hour		OPEN HOLE:	

DEPTH BELOW SURFACE	BLOWS PER 6"
FROM - TO	ON SAMPLER

REMARKS / SOILS IDENTIFICATION

0'- 2' Asphalt & stone.
2'- 15' Yellow-brown medium sand & gravel
some cobbles.
15'- 20' Grey m/c sand & gravel some silt
trace cobbles.





ENVIRONMENTAL SPECIALISTS

Chimney Rock Road, Bldg. 9W
Bound Brook, NJ 08805
Telephone: (908) 722-4266
Toll Free: (800) 242-6648
FAX: (732) 356-1009
<http://www.summitdrilling.com>
email: info@summitdrilling.com

WELL LOG

WELL: MW19-8 DATE DRILLED: 10/29/1999 COORD #1: 25.02.394 PERMIT #1: 25-55286
COORD #2: PERMIT #2:

SITE: L. E. Carpenter & Co., 170 North Main St., Wharton, NJ 07885
OWNER: L. E. Carpenter, 170 North Main Street, Wharton, NJ 07885

COUNTY: Morris
XSTREET: Ross Street
USE: Monitoring

INNER CASING: S. Steel
DIAMETER: 2"
LENGTH: 11'

OUTER CASING:
DIAMETER:
LENGTH:

SCREEN TYPE 1: S. Steel
SCREEN TYPE 2:
DIAMETER: 2"
LENGTH 1: 9'

DRILLING METHOD: Air Rotary
SAMPLING METHOD:
HOLE DIA: 6", 6"
TOTAL DEPTH: 21'

SET WELL: 21'
GRAVEL PK SZ: Morie #2
DRILLER: Carmine DeCorso
SURFACE COMPLETION: M

GAL PER MIN: 3
STAT H2O LVL: 11'
DEVELOPMENT METHOD: Pump
DEVELOPMENT TIME: 1/2 Hour

CASING SEAL: Portland
OPEN HOLE:

DEPTH BELOW SURFACE	BLOWS PER 6"
FROM - TO	ON SAMPLER

Ground Surface

AT-Grade Protective
Watertight Manhole

Locking Compression Cap

2' x 2' Concrete Pad
Gravel Mix, Concrete

S. Steel Casing
2" Diameter

Neat Cement Grout
(ASTM Type II, 5% Bentonite Added)

0'- 8'

8'- 11' Solid

S. Steel Screen
2" Diameter

11'- 20' Screen

Gravel Pack
8'- 21'

Bore Hole
6", 6" Diameter

Bottom Cap

MONITORING WELL RECORD

Well Permit No. 25

55284

Atlas Sheet Coordinates 25 02 394

OWNER IDENTIFICATION

Owner E. CARPENTER COMPANY

170 N. MAIN ST.

Address MARTHON

State NJ

Zip Code

City

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW132

County MORRIS

Municipality MARTHON BORO

Lot No.

Block No. 801

Address 170 N. MAIN ST.

DATE WELL STARTED 13 28 99
DATE WELL COMPLETED 16 28 99**TYPE OF WELL (as per Well Permit Categories)**MONITORING
OWNER INVESTIGATION

Regulatory Program Requiring Well

Case I.D.#

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Camco Customs Environmental Mgmt. Co.**WELL CONSTRUCTION**Total depth drilled 23 ft.
Well finished to 20 ft.Borehole diameter:
Top 6" in.
Bottom 5" in.Well was finished: above grade.
 flush mounted

If finished above grade, casing height (stick up) above land surface ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11 ft.

Water level was measured using Tace

Well was developed for 1/2 Hour hours at 2 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig S-90

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company - SUMMIT WELL DRILLING CO INC

Well Driller (Print) Steve Kotowski

Driller's Signature

Registration No. J1622 Date 11 / 6 / 99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	10'	2"	S. Steel	sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10'	20'	2"	S. Steel	SC-200
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7'	20'		Marine #2	
Grout	0'	7'		Neat Cement Bentcnite	12 lbs. 10 lbs.

Grouting Method Gravie

Drilling Method Air Rotary

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

New Jersey Department of Environmental Protection

Bureau of Water Allocation

MONITORING WELL RECORD

Well Permit No. 25

55285

Atlas Sheet Coordinates 25 .02 394

OWNER IDENTIFICATION - Owner LE CARPENTER COMPANY
Address 170 N. MAIN ST.

City WHARTON State NJ Zip Code

WELL LOCATION - If not the same as owner please give address Owner's Well No. 15A19-7

County MORRIS Municipality WHARTON BORO Lot No. 2 Block No. 801

Address 170 N. MAIN ST.

DATE WELL STARTED 10/28/98

DATE WELL COMPLETED 10/28/98

TYPE OF WELL (as per Well Permit Categories) MONITORING OWNER INVESTIGATION

Regulatory Program Requiring Well

Case I.D.#

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Cemco Customs Environmental Mgmt. Corp.

WELL CONSTRUCTIONTotal depth drilled 20' ft.
Well finished to 20' ft.Borehole diameter:
Top 6" in.
Bottom 2" in.Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11' ft.

Water level was measured using Tape

Well was developed for 1.2 hours hours at 3 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig S-30

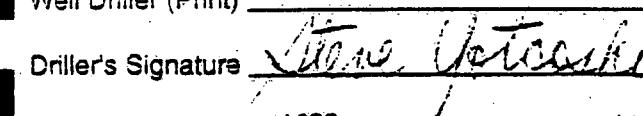
Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None D C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Steve Yotcoski

Driller's Signature 

Registration No. J1622 Date 11 / 6 / 98

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	10'	2"	S. Steel	Sch. 40
Middle Casing (for triple cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	10'	20'	2"	S. Steel	SCH. 50
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	7'	20'		Marie #2	
Grout	0'	7'		Neat Cement Bentcnite	175 lbs. 10 lbs.

Grouting Method Gravimetric

Drilling Method Air Rotary

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

New Jersey Department of Environmental Protection

Bureau of Water Allocation

MONITORING WELL RECORD

25

55286

Well Permit No.

25

55286

25

02

394

Atlas Sheet Coordinates

OWNER IDENTIFICATION - Owner LE CARPENTER COMPANY
Address 170 N. MAIN ST.
City WHARTON

NJ

Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. 1AW19-A
County MORRIS **Municipality** WHARTON BORO **Lot No.** 2 **Block No.** 801
Address 170 N. MAIN ST.

DATE WELL STARTED 10/29/99
DATE WELL COMPLETED 10/29/99

Case I.D.#

TYPE OF WELL (as per Well Permit Categories) MONITORING
 Regulatory Program Requiring Well UNEX - INVESTIGATION

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Cemco - Customs Environmental Mgmt. Tel: 973-4

WELL CONSTRUCTION

Total depth drilled 21' ft.
 Well finished to 21' ft.

Borehole diameter:
 Top 6" in.
 Bottom 6" in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface ft.

Was steel protective casing installed?
 Yes No

Static water level after drilling 11' ft.

Water level was measured using Tape

Well was developed for 1/2 Hour hours at 3 gpm

Method of development Pump

Was permanent pumping equipment installed? Yes No

Pump capacity gpm

Pump type:

Drilling Fluid Type of Rig R-50

Health and Safety Plan submitted? Yes No

Level of Protection used on site (circle one) None C B A

I certify that I have constructed the above referenced well in accordance with all well permit requirements and applicable State rules and regulations.

Drilling Company SUMMIT WELL DRILLING CO INC

Well Driller (Print) Camine DeCorso

Driller's Signature Camine DeCorso

Registration No. J1210 Date 11 / 5 / 99

Note: Measure all depths from land surface	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt./Rating (lbs/sch no.)
Single/Inner Casing	0'	11'	2"	S. Steel	sch. 40
Middle Casing (for triple-cased wells only)					
Outer Casing (largest diameter)					
Open Hole or Screen (No. Used)	11'	20'	2"	S. Steel	.020
Blank Casings (No. Used)					
Tail Piece					
Gravel Pack	8'	21'		Marie #2	
Grout	8'	3'		Neat Cement Bentonite	128 lbs. 10 lbs.

Grouting Method tremie

Drilling Method Air Rotary

GEOLOGIC LOG

Note each depth where water was encountered in consolidated formations.

See Attached

Appendix F

RECON Revised Professional Survey Map

BASELINE LOCATION	WELL	GEODETIC LOCATION		ELEVATIONS		
		LATITUDE	LONGITUDE	GROUND	OUTER CASING	INNER WELL
SOUTH 28° 19' 70" WEST 61° 04'	MW-1R	40° 54' 13.8"	74° 34' 38.8"	635.79	635.78	635.47
NORTH 24° 17' EAST 306° 70'	MW-2R	40° 54' 14.4"	74° 34' 33.1"	629.06	632.28	632.14
NORTH 24° 17' EAST 306° 40'	MW-GR	40° 54' 13.8"	74° 34' 34.1"	629.82	632.44	632.42
NORTH 24° 17' EAST 306° 40'	MW-12R	40° 54' 12.3"	74° 34' 35.9"	632.17	634.86	634.33
NORTH 24° 17' EAST 306° 40'	MW-13R	40° 54' 15.0"	74° 34' 31.8"	628.26	630.96	630.59
NORTH 24° 17' EAST 306° 40'	MW-2G	40° 54' 15.7"	74° 34' 34.3"	630.84	634.39	633.26
NORTH 24° 17' EAST 306° 40'	MW-2A2	40° 54' 14.2"	74° 34' 39.0"	637.31	639.62	639.19
NORTH 24° 17' EAST 306° 40'	WP-A9	40° 54' 13.6"	74° 34' 37.4"	637.22	—	639.32
NORTH 24° 17' EAST 306° 40'	WP-B4	40° 54' 14.5"	74° 34' 34.5"	629.93	—	632.56
NORTH 24° 17' EAST 306° 40'	WP-B10	40° 54' 14.9"	74° 34' 34.7"	630.42	633.12	632.74
NORTH 24° 17' EAST 306° 40'	WP-C1	40° 54' 12.6"	74° 34' 36.1"	632.81	—	633.51
NORTH 24° 17' EAST 306° 40'	WP-C4	40° 54' 12.8"	74° 34' 35.9"	632.44	—	633.27
NORTH 24° 17' EAST 306° 40'	CW-1	40° 54' 14.2"	74° 34' 34.7"	630.83	634.35	—
NORTH 24° 17' EAST 306° 40'	CW-3	40° 54' 13.8"	74° 34' 32.5"	628.63	633.30	—
NORTH 24° 17' EAST 306° 40'	MW-10(R)	40° 54' 14.2"	74° 34' 34.5"	630.66	633.35	633.09
NORTH 24° 17' EAST 306° 40'	MW-11(R)	40° 54' 14.1"	74° 34' 34.9"	630.89	633.67	633.33
NORTH 24° 17' EAST 306° 40'	MW-19-2	40° 54' 17.2"	74° 34' 44.0"	637.05	639.36	638.76
NORTH 24° 17' EAST 306° 40'	MW-19-3	40° 54' 17.1"	74° 34' 44.5"	637.54	640.04	639.65
NORTH 24° 17' EAST 306° 40'	MW-19-4	40° 54' 16.7"	74° 34' 44.0"	636.27	638.44	637.74
NORTH 24° 17' EAST 306° 40'	MW-19-5	40° 54' 17.3"	74° 34' 43.5"	636.39	639.07	638.74
NORTH 24° 17' EAST 306° 40'	MW-19-6	40° 54' 17.5"	74° 34' 43.8"	636.78	636.78	636.44
NORTH 24° 17' EAST 306° 40'	MW-19-7	40° 54' 17.6"	74° 34' 43.1"	636.00	636.00	635.60
NORTH 24° 17' EAST 306° 40'	MW-19-8	40° 54' 17.8"	74° 34' 43.2"	636.44	636.44	635.96

BASELINE LOCATION	WELL	GEODETIC LOCATION		ELEVATIONS		
		LATITUDE	LONGITUDE	GROUND	OUTER CASING	INNER WELL
NORTH 308° 55' EAST 310° 40'	DC-P0	40° 54' 13.4"	74° 34' 33.7"	629.72	—	631.86
NORTH 346° 06' EAST 304° 06'	DC-P1	40° 54' 13.5"	74° 34' 32.3"	627.62	—	629.49
NORTH 334° 47' EAST 304° 33'	DC-P2	40° 54' 13.6"	74° 34' 32.1"	627.14	—	629.29
NORTH 283° 30' EAST 309° 87'	WP-B8	40° 54' 13.8"	74° 34' 33.5"	630.32	—	632.37
NORTH 307° 47' EAST 314° 20'	WP-B10	40° 54' 14.3"	74° 34' 34.7"	630.50	633.01	632.63
NORTH 274° 40' EAST 312° 10'	WP-C1	40° 54' 12.6"	74° 34' 36.1"	632.66	—	634.44
NORTH 20° 29' EAST 319° 57'	WP-C2	40° 54' 12.5"	74° 34' 35.6"	633.02	—	634.46
NORTH 66° 07' EAST 309° 60'	RP-1	40° 54' 12.5"	74° 34' 35.9"	631.00	—	632.64
NORTH 58° 55' EAST 305° 63'	RP-2	40° 54' 12.4"	74° 34' 34.4"	632.54	—	634.59
NORTH 201° 50' EAST 326° 03'	RP-3	40° 54' 12.1"	74° 34' 34.5"	642.28	—	—
NORTH 113° 47' EAST 318° 01'	RP-4	40° 54' 12.8"	74° 34' 35.9"	642.28	—	—
NORTH 368° 55' EAST 210° 95'	SG-D1	40° 54' 14.0"	74° 34' 34.9"	626.41	—	—
NORTH 256° 30' EAST 383° 00'	SG-D2	40° 54' 14.0"	74° 34' 34.8"	626.86	—	—
NORTH 363° 60' EAST 208° 22'	SG-D3	40° 54' 14.0"	74° 34' 34.8"	626.43	—	—
NORTH 104° 76' EAST 402° 35'	SG-R1	40° 54' 14.2"	74° 34' 35.9"	641.52	—	—
NORTH 94° 68' EAST 116° 34'	SG-R2	40° 54' 14.2"	74° 34' 35.9"	628.84	—	—
NORTH 165° 54' EAST 510° 22'	SG-R3	40° 54' 14.2"	74° 34' 35.9"	627.38	—	—

BASELINE LOCATION	WELL	GEODETIC LOCATION		ELEVATIONS		
		LATITUDE	LONGITUDE	GROUND	OUTER CASING	INNER WELL
SOUTH 33° 85' WEST 57° 07'	MW-1	40° 54' 13.8"	74° 34' 39.4"	633.61	630.97	639.16
NORTH 24° 17' EAST 293° 57'	MW-2	40° 54' 14.5"	74° 34' 33.2"	630.07	633.35	633.57
NORTH 13° 34' EAST 300° 30'	MW-3	40° 54' 14.0"	74° 34' 32.6"	628.64	632.27	632.56
NORTH 4° 77' EAST 302° 50'	MW-4	40° 54' 12.4"	74° 34' 34.4"	628.86	632.31	632.50
NORTH 254° 40' WEST 90° 16'	MW-5	40° 54' 16.7"	74° 34' 37.4"	629.81	632.20	632.42
NORTH 162° 54' EAST 271° 47'	MW-6	40° 54' 13.9"	74° 34' 38.9"	630.84	632.77	632.00
NORTH 31° 37' EAST 312° 10'	MW-7	40° 54' 12.9"	74° 34' 34.0"	629.59	631.18	630.68
NORTH 70° 54' EAST 323° 44'	MW-8	40° 54' 12.7"	74° 34' 33.3"	627.99	630.56	628.79
NORTH 4° 77' EAST 252° 41'	MW-9	40° 54' 12.5"	74° 34' 35.1"	629.21	631.69	630.18
NORTH 01° 43' EAST 259° 74'	MW-10	40° 54' 13.2"	74° 34' 34.6"	630.85	631.52	632.96
NORTH 137° 55' EAST 199° 33'	MW-11	40° 54' 14.0"	74° 34' 34.9"	631.23	633.20	632.96
NORTH 141° 20' EAST 208° 22'	MW-11D	40° 54' 14.1"	74° 34' 34.8"	630.80	632.68	632.42
NORTH 53° 37' EAST 199° 87'	MW-12S	40° 54' 12.3"	74° 34' 36.0"	630.23	632.71	633.18
NORTH 50° 50' EAST 209° 11'	MW-12X	40° 54' 12.3"	74° 34' 35.9"	629.94	632.23	633.06
NORTH 339° 37' EAST 360° 32'	MW-13	40° 54' 15.3"	74° 34' 31.7"	626.34	631.40	631.23
NORTH 340° 76' EAST 356° 62'	MW-13I	40° 54' 15.1"	74° 34' 31.9"	628.36	630.66	630.60
NORTH 249° 49' EAST 452° 42'	MW-14S	40° 54' 14.3"	74° 34' 31.0"	625.78	628.63	628.41
NORTH 302° 03' EAST 462° 42'	MW-14D	40° 54' 14.3"	74° 34' 30.9"	625.85	628.58	628.53
NORTH 121° 08' WEST 55° 54'	MW-15S	40° 54' 15.0"	74° 34' 38.0"	634.83	637.03	636.77
NORTH 125° 40' WEST 46° 56'	MW-15I	40° 54' 15.0"	74° 34' 37.9"	634.74	636.88	636.66
NORTH 122° 49' WEST 36° 06'	MW-16S	40° 54' 15.9"	74° 34' 40.4"	632.57	634.69	634.47
NORTH 130° 04' WEST 36° 55'	MW-16I	40° 54' 16.0"	74° 34' 40.3"	632.43	635.08	634.96

BASELINE LOCATION	WELL	GEODETIC LOCATION</th	

Appendix G

Monitoring Well Sample Data

Project Name: RMT/L.E. Carpenter
 Date: November 15, 1999
 Job No.: 1072
 Sampler: G. Pizzuti



Parameter	Well Identification		
	19-6	19-7	19-8
Depth to water from TOC (feet) - before purging	10.33	9.55	9.91
Depth to water from TOC (feet) - after purging	10.37	9.58	9.91
Depth to water from TOC (feet) - before sampling	10.35	9.56	9.91
Depth to bottom from TOC (feet)	19.90	20.34	19.65
PID reading from well casing (ppm)	25	0.0	0.0
pH before purge	6.71	6.56	5.82
Temperature before purge (°C)	13.7 C	14.5 C	14.5 C
Dissolved oxygen before purge (ppm)	3.17	4.14	2.41
Conductivity before purge (umhos/cm)	0.654	1.29	0.423
Water volume in well (gallons)	1.38	1.75	1.59
Purge method	Peristaltic Pump	Peristaltic Pump	Peristaltic Pump
Purge start time	1045	1006	0913
Purge end time	1050	1012	0918
Purge rate (gpm)	1	1	1
Volume purged (gallons)	5	6	5
pH after purge	6.68	6.57	6.29
Temperature after purge (°C)	15.4 C	14.8 C	16.2 C
Dissolved oxygen after purge (ppm)	0	1.52	0
Conductivity after purge (umhos/cm)	0.646	1	0.426
pH after sample	6.63	6.62	6.46
Temperature after sample (°C)	14.5 C	14.1 C	15.5 C
Dissolved oxygen after sampling (ppm)	0.35	0.47	0.85
Conductivity after sample (umhos/cm)	0.653	1.04	0.439
Sampling method	Disposable Teflon Bailer	Disposable Teflon Bailer	Disposable Teflon Bailer
Time of sampling	1100	1015	0930

Appendix H

STL Envirotech Laboratory Analytical Report



STL Envirotech
777 New Durham Road
Edison, NJ 08817
Tel: (732) 549-3900
Fax: (732) 549-3679
www.stl-inc.com

December 15, 1999

Residuals Management Technologies, Inc.
222 South Riverside Plaza
Suite 280
Chicago, IL 60606

Attention: Mr. Nick Clevett

Re: Job No. V250 - L.E. Carpenter

Dear Mr. Clevett:

Enclosed are the results you requested for the following sample(s) received at our laboratory on November 15, 1999:

<u>Lab No.</u>	<u>Client ID</u>	<u>Analysis Required</u>
169024	19-8	BTEX (GC), bis-2-EHP
169025	19-7	BTEX (GC), bis-2-EHP
169026	19-9	BTEX (GC), bis-2-EHP
169027	19-6	BTEX (GC), bis-2-EHP
169028	Field_Blank	BTEX (GC), bis-2-EHP
169029	Trip_Blank	BTEX (GC)

An invoice for our services is also enclosed. If you have any questions please contact your Project Manager, Paul Simms, at (732) 549-3900.

Very truly yours,

Michael J. Urban
Laboratory Manager

Other Laboratory Locations:

- 149 Rangeview Road, North Billerica MA 01862
- 16203 Park Pkwy, Suite 110, Houston TX 77084
- 200 Monroe Turnpike, Monroe CT 06468
- 120 Southcenter Court, Suite 30C, Morrisville NC 27560
- 315 Fullerton Avenue, Newburgh NY 12550

- 11 East Olive Road, Pensacola FL 32514
- Westfield Executive Park, 53 Southampton Road, Westfield MA 01085
- 628 Route 10, Whippoorwill NJ 07981
- 55 South Park Drive, Colchester VT 05446

a part of
Severn Trent Services Inc



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Client ID: 19-8
Site: L.E. Carpenter

Lab Sample No: 169024
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/02/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8101.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate

ND

4.1



Client ID: 19-8
Site: L.E. Carpenter

Lab Sample No: 169024
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7251.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.31
Toluene	ND	0.34
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40



Client ID: 19-7
Site: L.E. Carpenter

Lab Sample No: 169025
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/02/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8112.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate

ND

4.1



Client ID: 19-7
Site: L.E. Carpenter

Lab Sample No: 169025
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7252.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 50.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	16
Toluene	51	17
Ethylbenzene	100	19
Xylene (Total)	1400	20



Client ID: 19-9
Site: L.E. Carpenter

Lab Sample No: 169026
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/03/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8113.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

bis(2-Ethylhexyl)phthalate

Analytical Result
Units: ug/l

ND

Method Detection
Limit
Units: ug/l

4.1



Client ID: 19-9
Site: L.E. Carpenter

Lab Sample No: 169026
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/22/99
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid2678.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 25.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Benzene	13	7.8
Toluene	51	8.5
Ethylbenzene	110	9.5
Xylene (Total)	1300	10



Client ID: 19-6
Site: L.E. Carpenter

Lab Sample No: 169027
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/03/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8114.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

bis(2-Ethylhexyl)phthalate

Analytical Result
Units: ug/l

32

Method Detection Limit
Units: ug/l

4.1



Client ID: 19-6
Site: L.E. Carpenter

Lab Sample No: 169027
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7254.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 200.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Benzene	ND	62
Toluene	3400	68
Ethylbenzene	94	76
Xylene (Total)	500	80



Client ID: Field_Blank
Site: L.E. Carpenter

Lab Sample No: 169028
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/03/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8115.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate ND 4.2



Client ID: Field Blank
Site: L.E. Carpenter

Lab Sample No: 169028
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7255.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Benzene	ND	0.31
Toluene	ND	0.34
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40



Client ID: Trip_Blank
Site: L.E. Carpenter

Lab Sample No: 169029
Lab Job No: V250

Date Sampled: 11/12/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7256.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
Benzene	ND	0.31
Toluene	ND	0.34
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40

CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE ____ OF ____

Name (for report and invoice) NICK Clevertt	Samplers Name (Printed) GARY PIZZUTI (CEMCO)		Site/Project Identification LE Computer Ref # 3863.15		
Company RMT INC.	P.O. #	State (Location of site): NJ: <input checked="" type="checkbox"/> NY: <input type="checkbox"/> Other:			
Address 222 S. RIVERSIDE Plaza Suite 520		Regulatory Program:			
City Chicago State IL 60603		Analysis Turnaround Time Standard <input checked="" type="checkbox"/>			
Phone 312-575-0200 Fax 312-575-0300		Rush Charges Authorized For: 2 Week <input type="checkbox"/> 1 Week <input type="checkbox"/> Other <input type="checkbox"/>			
		ANALYSIS REQUESTED (ENTER 'X' BELOW TO INDICATE REQUEST)		LAB USE ONLY	
		Y	N		
		O	Z		
		S	A		
		G	B		
		H	C		
		I	D		
		J	E		
		K	F		
		L	G		
		M	H		
		N	I		
		O	J		
		P	K		
		Q	L		
		R	M		
		S	N		
		T	O		
		U	P		
		V	Q		
		W	R		
		X	S		
		Y	T		
		Z	U		
			V		
			W		
			X		
			Y		
			Z		
				Sample Numbers	
Sample Identification	Date	Time	Matrix	No. of Cont.	
19-8	11/15/99	1920	AQ	4 3 1	169024
19-7	11/15/99	10:45	AQ	4 3 1	169025
19-9	11/15/99	10:45	AQ	4 3 1	169026
19-6	11/15/99	1100	AQ	4 3 1	169027
Field Blank	11/15/99	(est)	AQ	3 3 1	169028
Strip Blank	11/14/99	--	AQ	3 3 2	169029
Temp. Blank	--	--	AQ	1	
Preservation Used: 1 = ICE <input checked="" type="radio"/> 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH 6 = Other _____, 7 = Other _____					Soil: _____
					Water: 1605

Special Instructions

Water Metals Filtered (Yes/No)? _____				
Relinquished by G.Pizzuti	Company CEMCO	Date / Time 11/15/99 11243	Received by H.Schulze	Company HOWARD SCHULZE
Relinquished by 2)	Company	Date / Time 1	Received by 2)	Company
Relinquished by 3)	Company	Date / Time 1	Received by 3)	Company
Relinquished by 4)	Company	Date / Time 1	Received by 4)	Company

Laboratory Certifications: New Jersey (12543), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Massachusetts (M-NJ312), North Carolina (No. 578)

**INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Envirotech**

**777 New Durham Road, Edison, New Jersey
08817**

Job No: V250

Site: L.E. Carpenter

Client: Residuals Management Technologies, Inc.

BNAMS

WATER - 625

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
169024	11/15/1999	11/15/1999	11/22/99	cf	12/1/99	LL	SC79
169025	11/15/1999	11/15/1999	/	/	/	/	/
169026	11/15/1999	11/15/1999	/	/	12/3/99	/	/
169027	11/15/1999	11/15/1999	/	/	/	/	/
169028	11/15/1999	11/15/1999	/	/	/	/	/

**INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Envirotech**

**777 New Durham Road, Edison, New Jersey
08817**

Job No: V250

Site: L.E. Carpenter

Client: Residuals Management Technologies, Inc.

VOAGC

602

Analytical Methodology Summary

Volatile Organics:

Unless otherwise specified, water samples are analyzed for volatile organics by purge and trap GC/MS as specified in EPA Method 624. Drinking water samples are analyzed by EPA Method 524.2. Solid samples are analyzed for volatile organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8260B. Water samples are analyzed for volatile organics by purge and trap GC/PID and GC/ELCD as specified in EPA Methods 601 and 602. Solid samples are analyzed by GC/PID and GC/ELCD in accordance with SW-846, 3rd Edition Method 8021B.

Acid and Base/Neutral Extractable Organics:

Unless otherwise specified, water samples are analyzed for acid and/or base/neutral extractable organics by GC/MS in accordance with EPA Method 625. Solids are analyzed for acid and/or base/neutral extractable organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8270C.

GC/MS Nontarget Compound Analysis:

Analysis for nontarget compounds is conducted, upon request, in conjunction with GC/MS analyses by EPA Methods 624, 625, 8260B and 8270C. Nontarget compound analysis is conducted using a forward library search of the EPA/NIH/NBS mass spectral library of compounds at the greatest apparent concentration (10% or greater of the nearest internal standard) in each organic fraction (15 for volatile, 15 for base/ neutrals and 10 for acid extractables).

Organochlorine Pesticides and PCBs:

Unless otherwise specified, water samples are analyzed for organochlorine pesticides and PCBs by dual column gas chromatography with electron capture detectors as specified in EPA Method 608. Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8081A for organochlorine pesticides and Method 8082 for PCBs.

Total Petroleum Hydrocarbons:

Water samples are analyzed for petroleum hydrocarbons by I.R. using EPA Method 418.1. Solid samples are prepared for analysis by soxhlet extraction consistent with the March 1990 N.J. DEP "Remedial Investigation Guide" Appendix A, page 52, and analyzed by U.S. EPA Method 418.1

Metals Analysis:

Metals analyses are performed by any of four techniques specified by a Method Code provided on each data report page, as follows:

- P - Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP)
- A - Flame Atomic Absorption
- F - Furnace Atomic Absorption
- CV - Manual Cold Vapor (Mercury)

Water samples are digested and analyzed using EPA methods provided in "Methods for Chemical Analysis of Water and Wastewater" (EPA 600/4-79-020). Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition); samples are digested according to Method 3050B "Acid Digestion of Soil, Sediments and Sludges."

Specific method references for ICP analyses are water Method 200.7 and solid Method 6010B. Mercury analyses are conducted by the manual cold vapor technique specified by water Method 245.1 and solid Method 7471A. Other specific Atomic Absorption method references are as follows:

Element	Water Test Method		Solid Test Method	
	Flame	Furnace	Flame	Furnace
Aluminum	202.1	202.2	7020	--
Antimony	204.1	204.2	7040	7041
Arsenic	--	206.2	--	7060
Barium	208.1	--	7080	--
Beryllium	210.1	210.2	7090	7091
Cadmium	213.1	213.2	7130	7131
Calcium	215.1	--	7140	--
Chromium, Total	218.1	218.2	7190	7191
Chromium, (+6)	218.4	218.5	7197	7195
Cobalt	219.1	219.2	7200	7201
Copper	220.1	220.2	7210	--
Iron	236.1	236.2	7380	--
Lead	239.1	239.2	7420	7421
Magnesium	242.1	--	7450	--
Manganese	243.1	243.2	7460	--
Nickel	249.1	249.2	7520	--
Potassium	258.1	--	7610	--
Selenium	--	270.2	--	7740
Silver	272.1	272.2	7760	--
Sodium	273.1	--	7770	--
Tin	283.1	283.2	7870	--
Thallium	279.1	279.2	7840	7841
Vanadium	286.1	286.2	7910	7911
Zinc	289.1	289.2	7950	--

Cyanide:

Water samples are analyzed for cyanide using EPA Method 335.3. Cyanide is determined in solid samples as specified in the EPA Contract Laboratory Program IFB dated July 1988, revised February 1989.

Phenols:

Water samples are analyzed for total phenols using EPA Method 420.2. Total phenols are determined in solid samples by preparing the sample as outlined in the EPA Contract Laboratory Program IFB for cyanide, followed by a phenols determination using EPA Method 420.1.

Cleanup of Semivolatile Extracts:

Upon request Method 3611B Alumina Column Cleanup and/or Method 3650B Acid-Base Partition Cleanup are performed to improve detection limits by the removal of saturated hydrocarbon interferences.

Hazardous Waste Characteristics:

Samples for hazardous waste characteristics are analyzed as specified in the U.S. EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition). Specific method references are as follows:

Ignitability - Method 1020A

Corrosivity - Water pH Method 9040B
Soil pH Method 9045C

Reactivity - Chapter 7, Section 7.3.3 and 7.3.4
respectively for hydrogen cyanide and
hydrogen sulfide release

Toxicity - TCLP Method 1311

Miscellaneous Parameters:

Additional analyses performed on both aqueous and solid samples are in accordance with methods published in the following references:

- Test Methods for Evaluating Solid Wastes, SW-846 3rd Edition, November 1986.
- Standard Methods for the Examination of Water and Wastewater, 17th Edition.
- Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, 1979.

DATA REPORTING QUALIFIERS

ND - The compound was not detected at the indicated concentration.

J - Mass spectral data indicates the presence of a compound that meets the identification criteria. The result is less than the specified detection limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NON-CONFORMANCE SUMMARY

STL Envirotech Job Number: V250

Volatile Organics Analysis:

All data conforms with method requirements /; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Base/Neutral and/or Acid Extractable Organics:

All data conforms with method requirements /; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

PCBs and/or Organochlorine Pesticides:

All data conforms with method requirements /; or
Analysis was not requested /; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Page 1 of 2

Non-conformance Summary, Page 2 of 2
STL Envirotech Job Number: V250

Metals Analysis:

All data conforms with method requirements _____; or
Analysis was not requested _____; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Total Petroleum Hydrocarbons:

All data conforms with method requirements _____; or
Analysis was not requested _____; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

General Chemistry/Disposal Parameters:

All data conforms with method requirements _____; or
Analysis was not requested _____; or
Non-conformance for the specific samples listed is as follows:

See continuation page if checked ()

Signature of
Laboratory Manager: [Signature]

Date: 12/27/99

Client ID: 19-8
Site: L.E. Carpenter

Lab Sample No: 169024
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/02/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8101.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	4.1

Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8101.d
Report Date: 02-Dec-1999 16:01

STL Envirotech

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8101.d
Lab Smp Id: 169024 Client Smp ID: 19-8

Inj Date : 02-DEC-1999 14:34 GL

Operator : BNAMS 1 Inst ID: BNAMS3.i

Smp Info : 169024;1000;2;1;;

Misc Info : V250;BIS2PHTH;5079;143

Comment :

Method : /chem/BNAMS3.i/625/11-23-99/02dec99.b/BNA625b.m

Meth Date : 02-Dec-1999 13:38 B Quant Type: ISTD

Cal Date : 23-NOV-1999 13:47 Cal File: t7897.d

Als bottle: 3

Dil Factor: 1.00000

Integrator: HP RTE

Compound Sublist: BIS2PHTH.sub

Target Version: 3.40

Processing Host: hpd1

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)

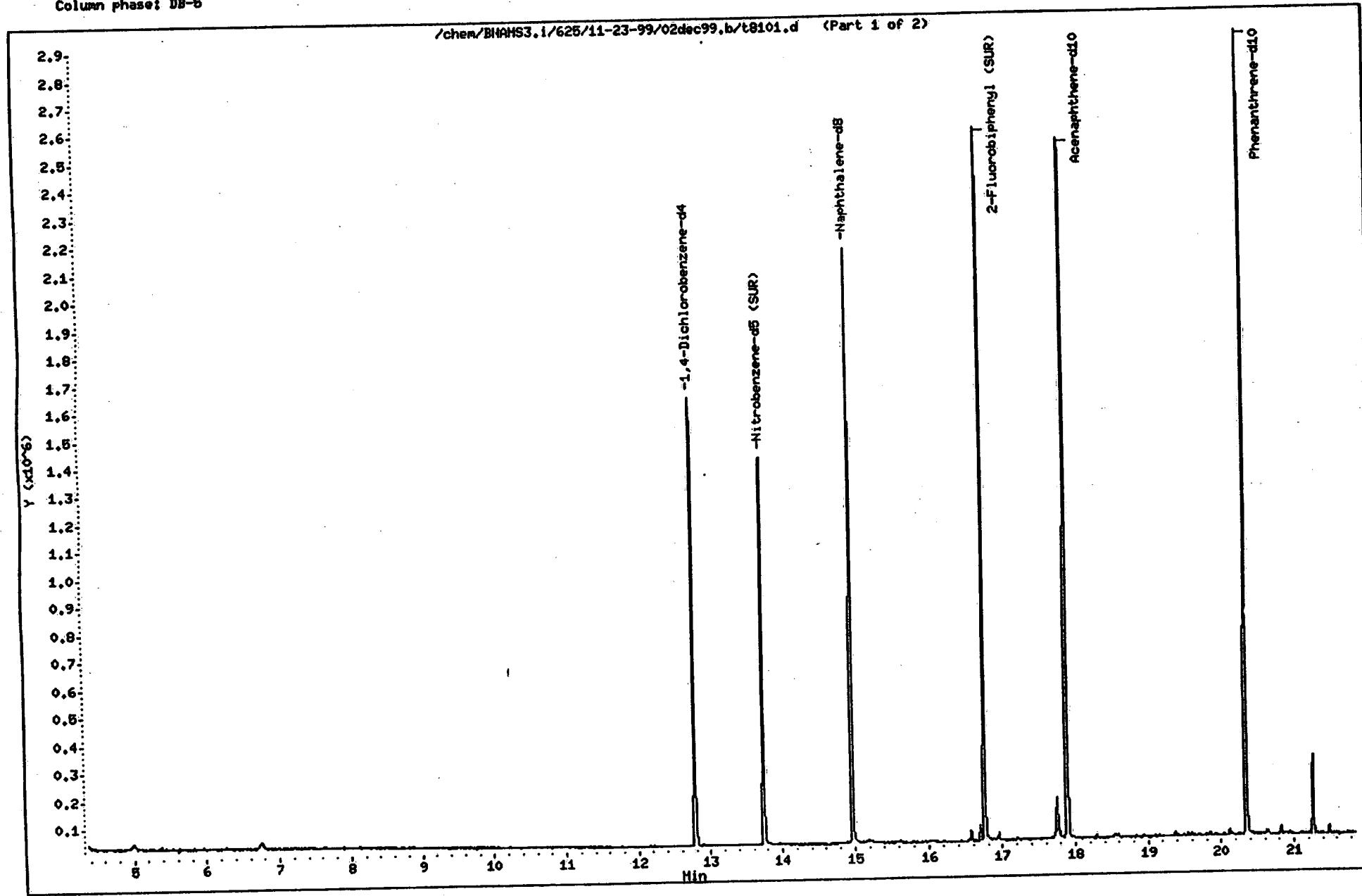
Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.775	12.779	(1.000)	317560	40.0000		
\$ 76 Nitrobenzene-d5 (SUR)	82	13.748	13.756	(0.919)	596548	40.0307	80	
* 80 Naphthalene-d8	136	14.964	14.973	(1.000)	1311722	40.0000		
\$ 77 2-Fluorobiphenyl (SUR)	172	16.759	16.767	(0.937)	1120113	40.6088	81	
* 82 Acenaphthene-d10	164	17.891	17.901	(1.000)	854431	40.0000		
* 83 Phenanthrene-d10	188	20.352	20.363	(1.000)	1706599	40.0000		
\$ 78 Terphenyl-d14 (SUR)	244	22.966	22.968	(0.929)	1126914	42.8315	86	
* 81 Chrysene-d12	240	24.727	24.746	(1.000)	1073913	40.0000		
* 84 Perylene-d12	264	28.064	28.030	(1.000)	1242242	40.0000		

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8101.d
Date : 02-DEC-1999 14:34
Client ID: 19-8
Sample Info: 169024;1000;2;1;;
Purge Volume: 1000.0
Column phase: DB-5

Instrument: BNAHS3.i

Operator: BNAHS 1
Column diameter: 0.53

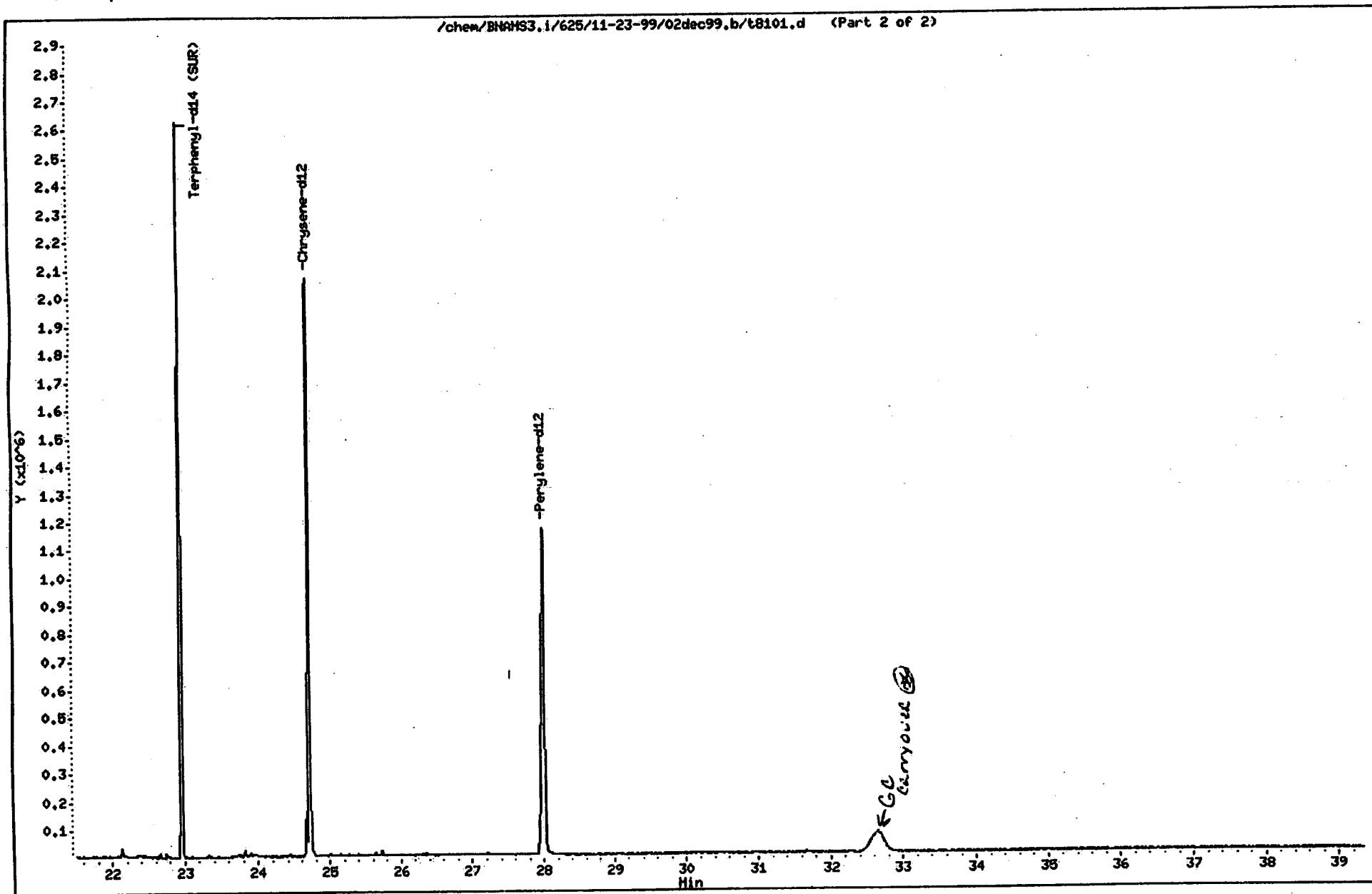
/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8101.d (Part 1 of 2)



Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8101.d
Date : 02-DEC-1999 14:34
Client ID: 19-8
Sample Info: 169024;1000;2;1;;
Purge Volume: 1000.0
Column phase: DB-5

Instrument: BNAHS3.i
Operator: BNAHS 1
Column diameter: 0.53

/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8101.d (Part 2 of 2)



Client ID: 19-7
Site: L.E. Carpenter

Lab Sample No: 169025
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/02/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8112.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 525

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

bis(2-Ethylhexyl)phthalate ND 4.1

Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8112.d
Report Date: 03-Dec-1999 09:26

STL Envirotech

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8112.d
Lab Smp Id: 169025 Client Smp ID: 19-7
Inj Date : 02-DEC-1999 23:25 ~~xx~~
Operator : BNAMS 1 Inst ID: BNAMS3.i
Smp Info : 169025;1000;2;1;;
Misc Info : V250;BIS2PHTH;5079;143
Comment :
Method : /chem/BNAMS3.i/625/11-23-99/02dec99.b/BNA625b.m
Meth Date : 02-Dec-1999 13:38 B Quant Type: ISTD
Cal Date : 23-NOV-1999 13:47 Cal File: t7897.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTH.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.776	12.779	(1.000)	322947	40.0000		
\$ 76 Nitrobenzene-d5 (SUR)	82	13.746	13.756	(0.919)	666458	49.8372		100
* 80 Naphthalene-d8	136	14.965	14.973	(1.000)	1177090	40.0000		
\$ 77 2-Fluorobiphenyl (SUR)	172	16.762	16.767	(0.937)	1172384	39.1605		78
* 82 Acenaphthene-d10	164	17.893	17.901	(1.000)	927377	40.0000		
* 83 Phenanthrene-d10	188	20.352	20.363	(1.000)	1507316	40.0000		
\$ 78 Terphenyl-d14 (SUR)	244	22.968	22.968	(0.929)	1214568	45.6029		91
* 81 Chrysene-d12	240	24.725	24.746	(1.000)	1087104	40.0000		
* 84 Perylene-d12	264	28.006	28.030	(1.000)	1296939	40.0000		

Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8112.d

Date : 02-DEC-1999 23:25

Client ID: 19-7

Sample Info: 169025;1000;2;1;;

Purge Volume: 1000.0

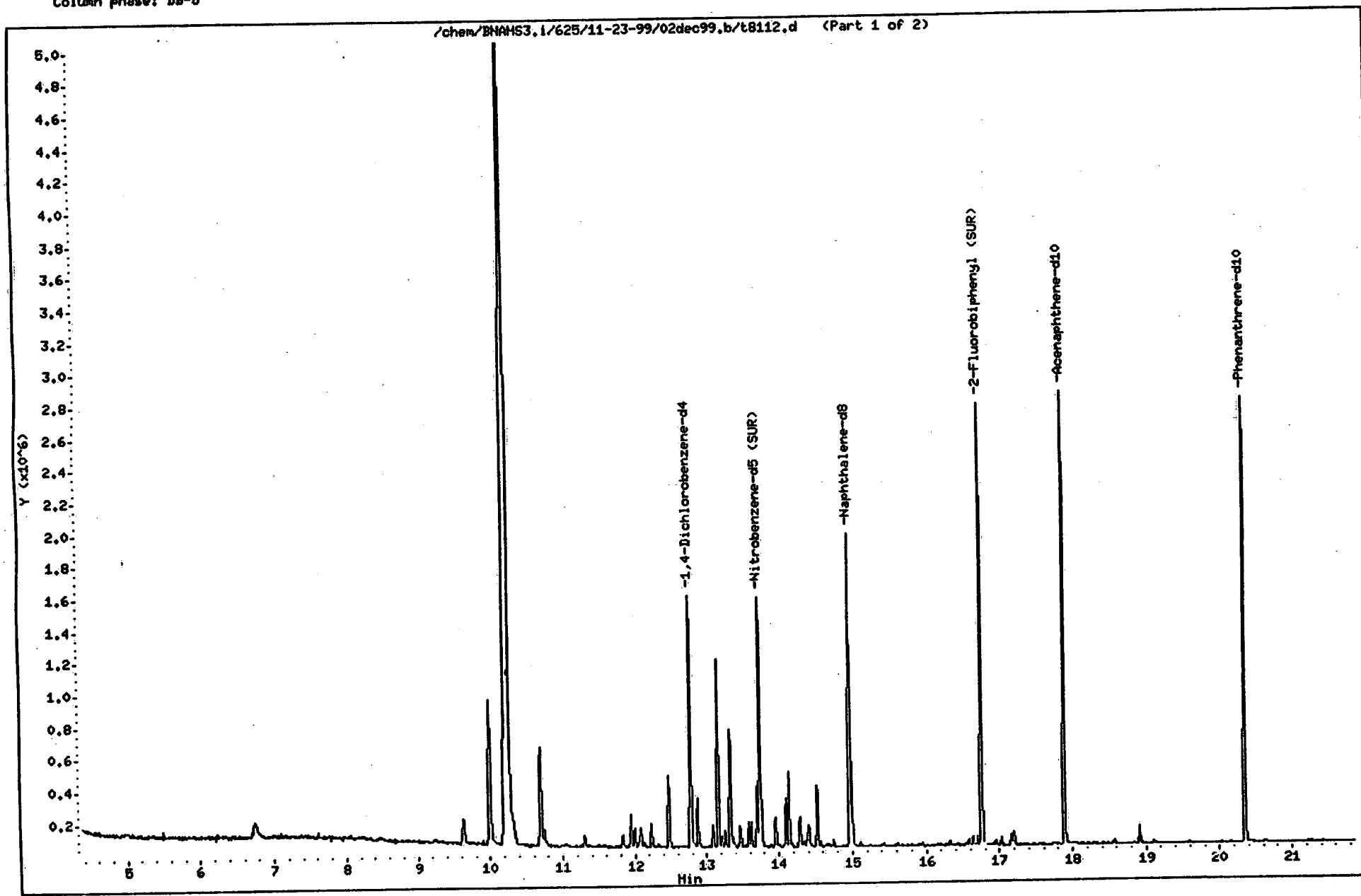
Column phase: DB-5

Instrument: BNAMS3.i

Operator: BNAMS 1

Column diameter: 0.53

/chem/BNAMS3.i/625/11-23-99/02dec99.b/t8112.d (Part 1 of 2)



Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8112.d

Date : 02-DEC-1999 23:28

Client ID: 19-7

Sample Info: 169025;1000;2;1;

Purge Volume: 1000.0

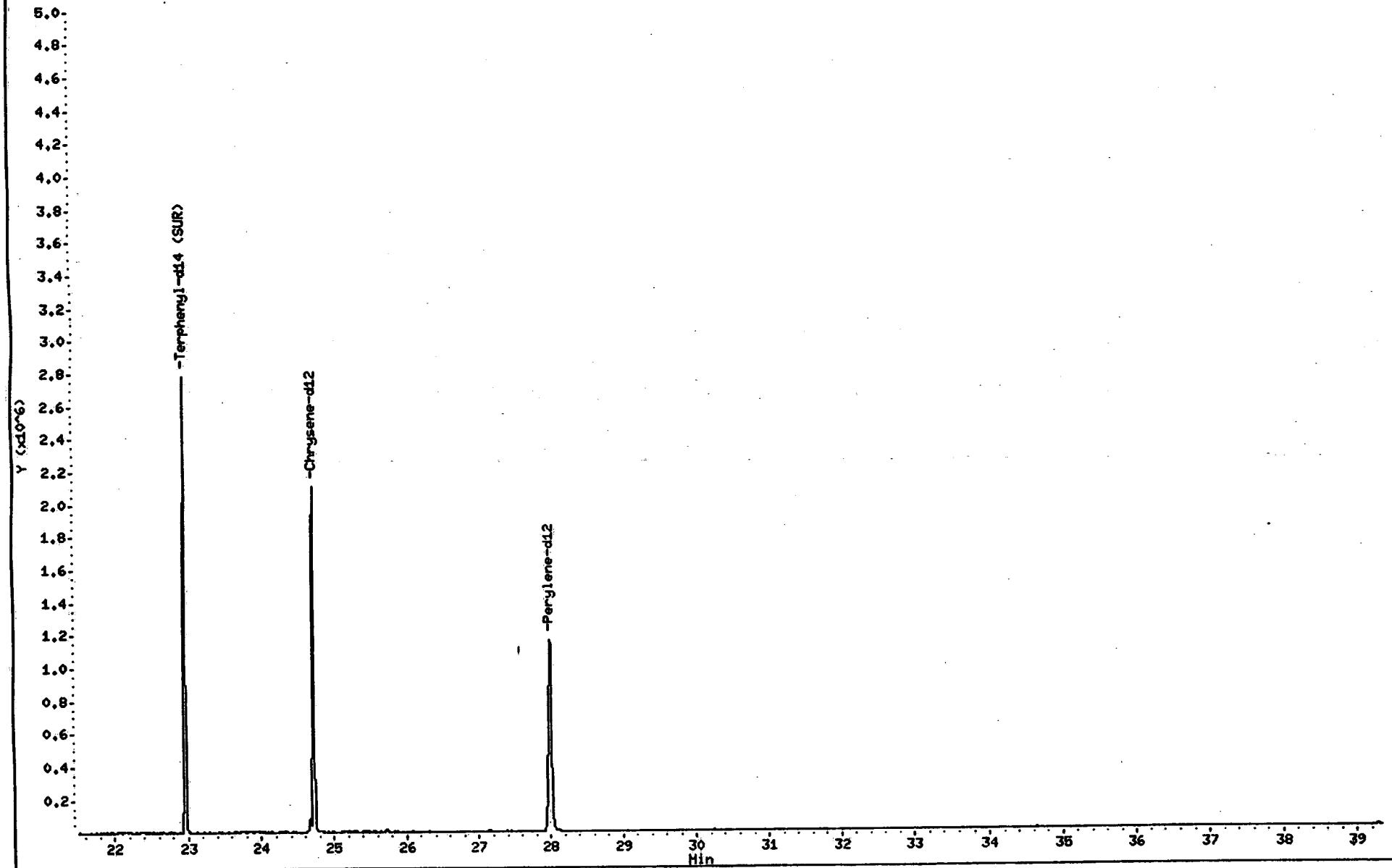
Column phase: DB-5

Instrument: BNAHS3.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8112.d (Part 2 of 2)



Client ID: 19-9
Site: L.E. Carpenter

Lab Sample No: 169026
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/03/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8113.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u>	<u>Method Detection Limit</u>
	<u>Units: ug/l</u>	<u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	4.1

Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8113.d
Report Date: 03-Dec-1999 09:26

STL Envirotech

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8113.d
Lab Smp Id: 169026 Client Smp ID: 19-9
Inj Date : 03-DEC-1999 00:13 *JK*
Operator : BNAMS 1 Inst ID: BNAMS3.i
Smp Info : 169026;1000;2;1;;
Misc Info : V250;BIS2PHTH;5079;143
Comment :
Method : /chem/BNAMS3.i/625/11-23-99/02dec99.b/BNA625b.m Quant Type: ISTD
Meth Date : 02-Dec-1999 13:38 B Cal File: t7897.d
Cal Date : 23-NOV-1999 13:47
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTH.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

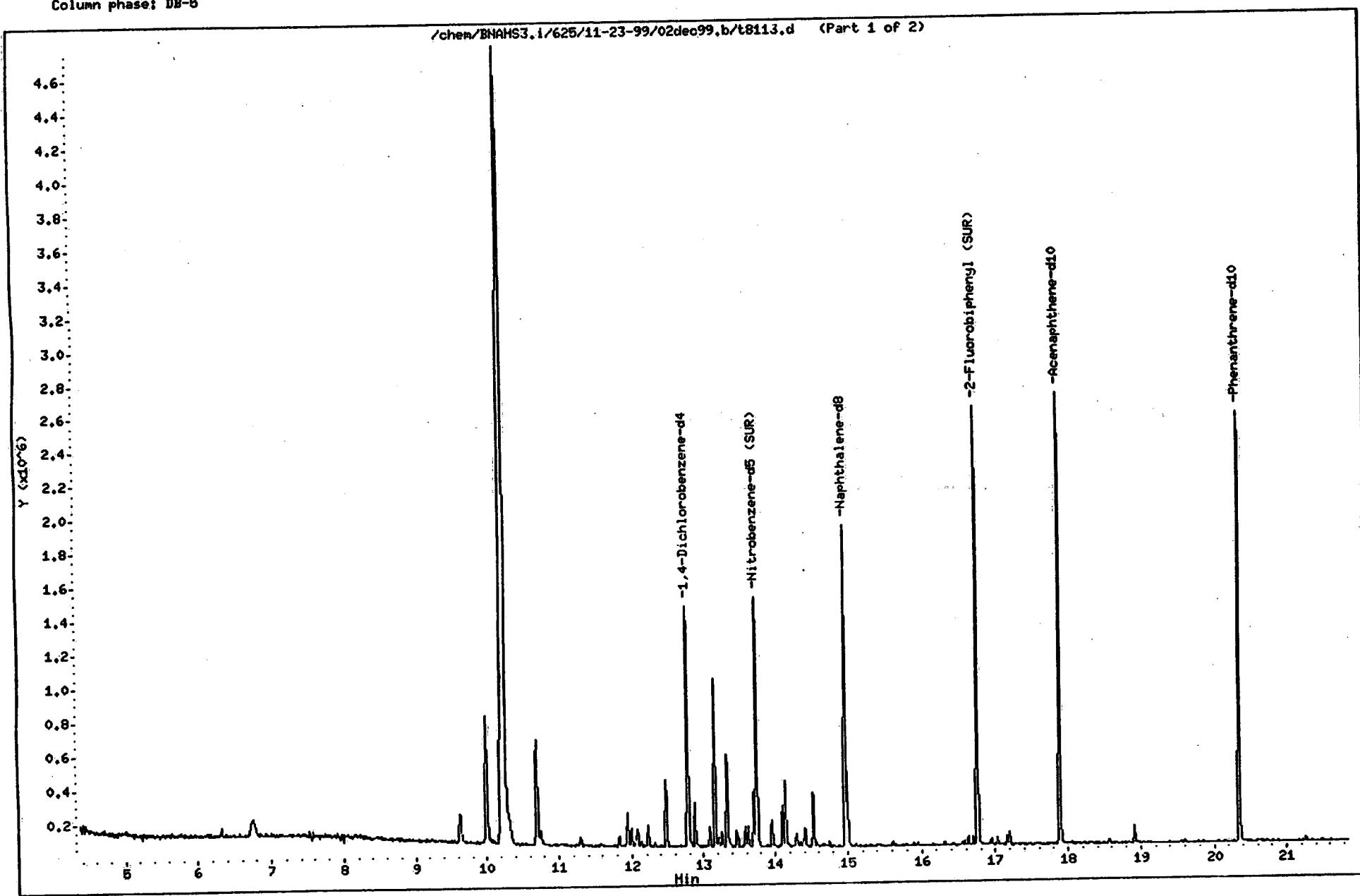
Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.776	12.779	(1.000)		305572	40.0000	
S 76 Nitrobenzene-d5 (SUR)	82	13.745	13.756	(0.919)		626714	47.8565	96
* 80 Naphthalene-d8	136	14.963	14.973	(1.000)		1152707	40.0000	
S 77 2-Fluorobiphenyl (SUR)	172	16.759	16.767	(0.937)		1070783	38.2091	76
* 82 Acenaphthene-d10	164	17.891	17.901	(1.000)		868100	40.0000	
* 83 Phenanthrene-d10	188	20.350	20.363	(1.000)		1413969	40.0000	
S 78 Terphenyl-d14 (SUR)	244	22.966	22.968	(0.929)		1197295	47.4793	95
* 81 Chrysene-d12	240	24.723	24.746	(1.000)		1029292	40.0000	
* 84 Perylene-d12	264	28.004	28.030	(1.000)		1240509	40.0000	

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8113.d
Date : 03-DEC-1999 00:13
Client ID: 19-9
Sample Info: 169026;1000;2;1;;
Purge Volume: 1000.0
Column phase: DB-5

Instrument: BNAHS3.i
Operator: BNAHS 1
Column diameter: 0.53

/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8113.d (Part 1 of 2)



Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8113.d

Date : 03-DEC-1999 00:13

Client ID: 19-9

Sample Info: 169026;1000;2;1;;

Purge Volume: 1000.0

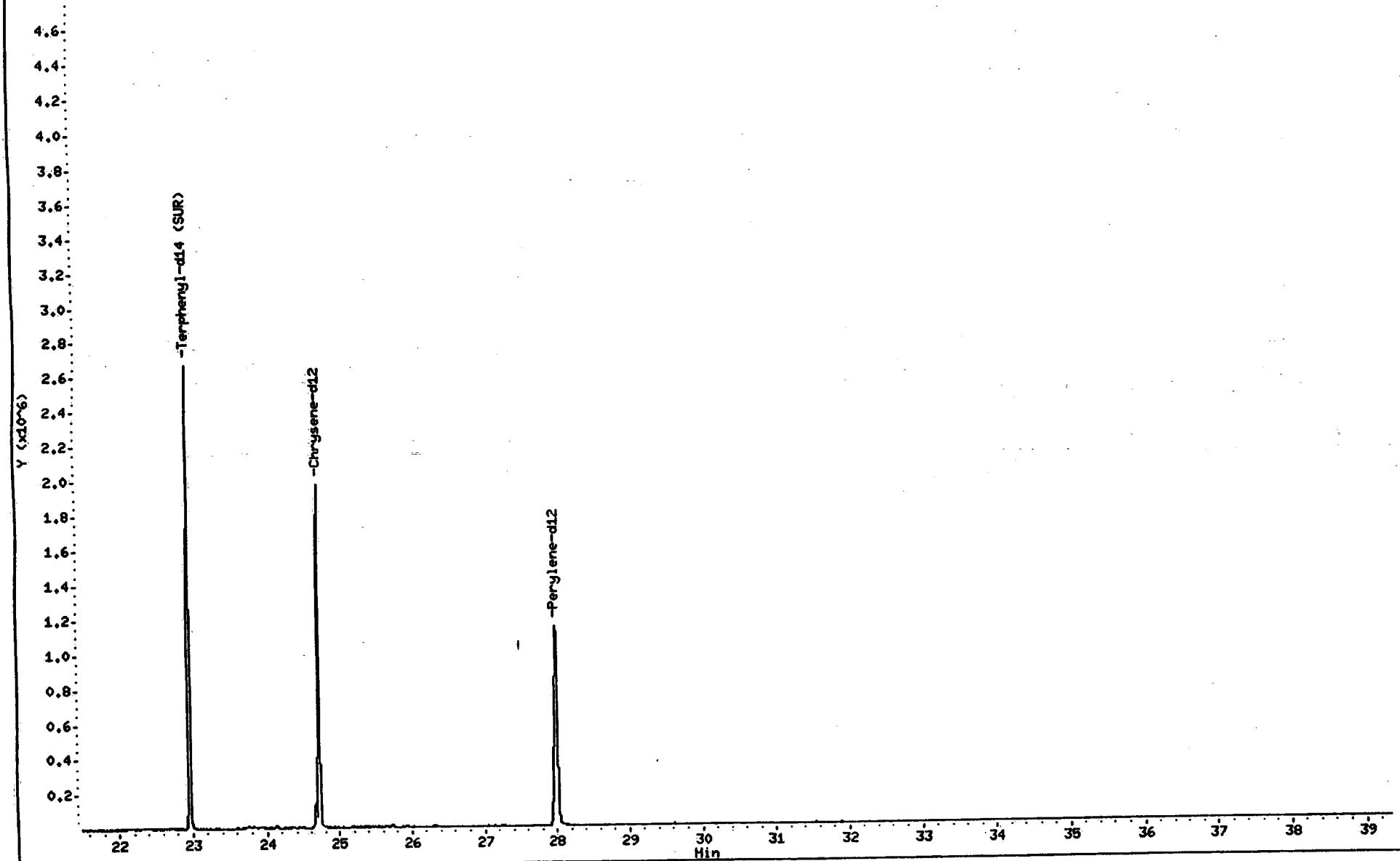
Column phase: DB-5

Instrument: BNAHS3.i

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8113.d (Part 2 of 2)



Client ID: 19-6
Site: L.E. Carpenter

Lab Sample No: 169027
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/03/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8114.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	32	4.1

Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8114.d
Report Date: 03-Dec-1999 09:26

STL Envirotech

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8114.d
Lab Smp Id: 169027 Client Smp ID: 19-6
Inj Date : 03-DEC-1999 01:01
Operator : BNAMS 1 Inst ID: BNAMS3.i
Smp Info : 169027;1000;2;1;;
Misc Info : V250;BIS2PHTH;5079;143
Comment :
Method : /chem/BNAMS3.i/625/11-23-99/02dec99.b/BNA625b.m
Meth Date : 02-Dec-1999 13:38 B Quant Type: ISTD
Cal Date : 23-NOV-1999 13:47 Cal File: t7897.d
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTH.sub
Target Version: 3.40
Processing Host: hpd1

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)

CONCENTRATIONS

ON-COLUMN FINAL

(ug/ml) (ug/L)

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
-----	----	---	--	-----	-----	-----	-----	-----
* 79 1,4-Dichlorobenzene-d4	152	12.781	12.779	(1.000)	320869	40.0000		
S 76 Nitrobenzene-d5 (SUR)	82	13.749	13.756	(0.919)	666191	49.1119	98	
* 80 Naphthalene-d8	136	14.967	14.973	(1.000)	1193994	40.0000		
S 77 2-Fluorobiphenyl (SUR)	172	16.762	16.767	(0.937)	1172257	39.0844	78	
* 82 Acenaphthene-d10	164	17.894	17.901	(1.000)	929083	40.0000		
* 83 Phenanthrene-d10	188	20.353	20.363	(1.000)	1475885	40.0000		
S 78 Terphenyl-d14 (SUR)	244	22.964	22.968	(0.929)	1177546	46.4978	93	
63 bis(2-Ethylhexyl)phthalate	149	24.675	24.678	(0.998)	480316	15.8337	32	
* 81 Chrysene-d12	240	24.728	24.746	(1.000)	1033683	40.0000		
* 84 Perylene-d12	264	28.011	28.030	(1.000)	1310047	40.0000		

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8114.d

Date : 03-DEC-1999 01:01

Client ID: 19-6

Sample Info: 169027;1000;2;1;;

Purge Volume: 1000.0

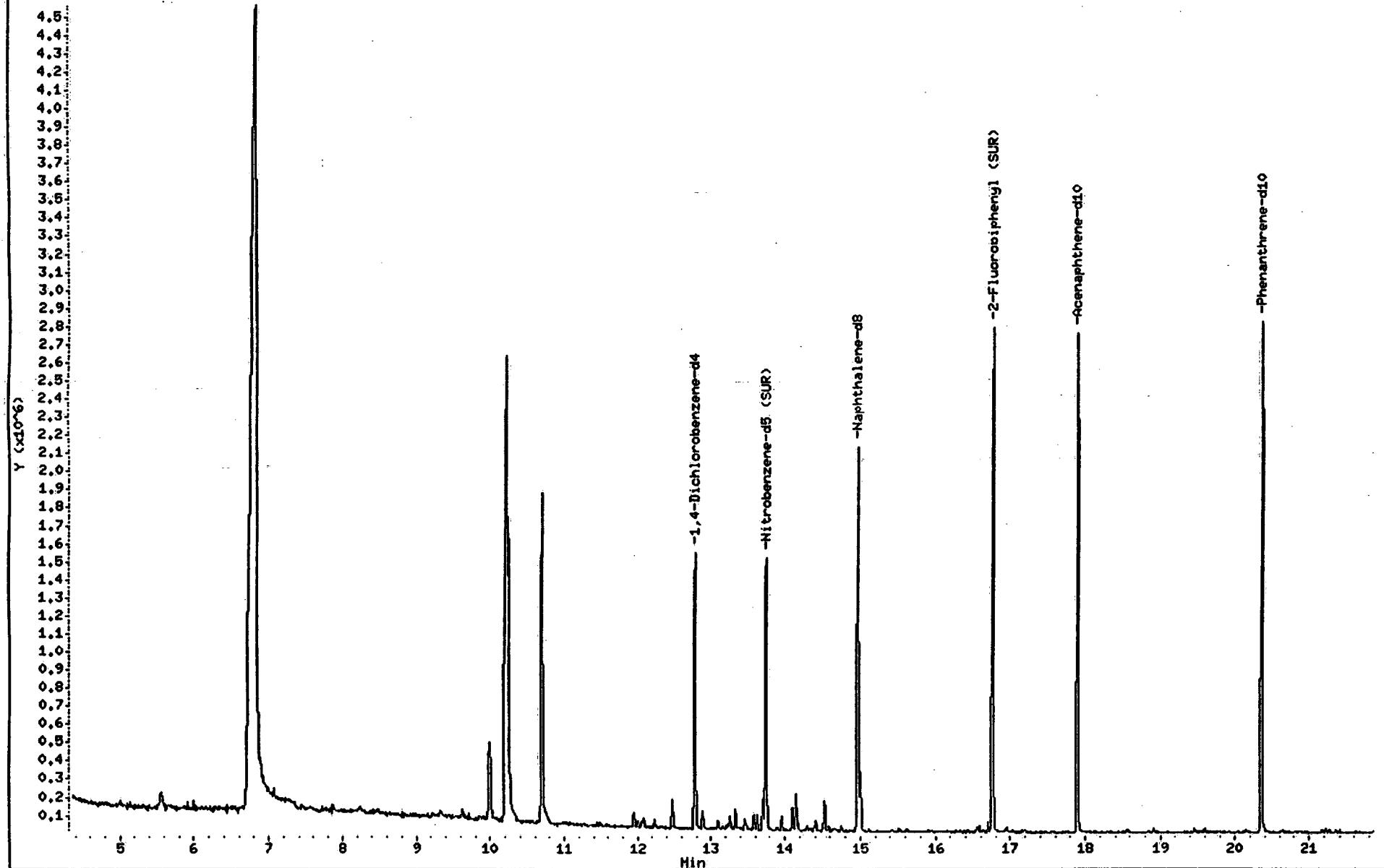
Column phase: DB-5

Instrument: BNAHS3.i

Operator: BNAHS 1

Column diameter: 0.53

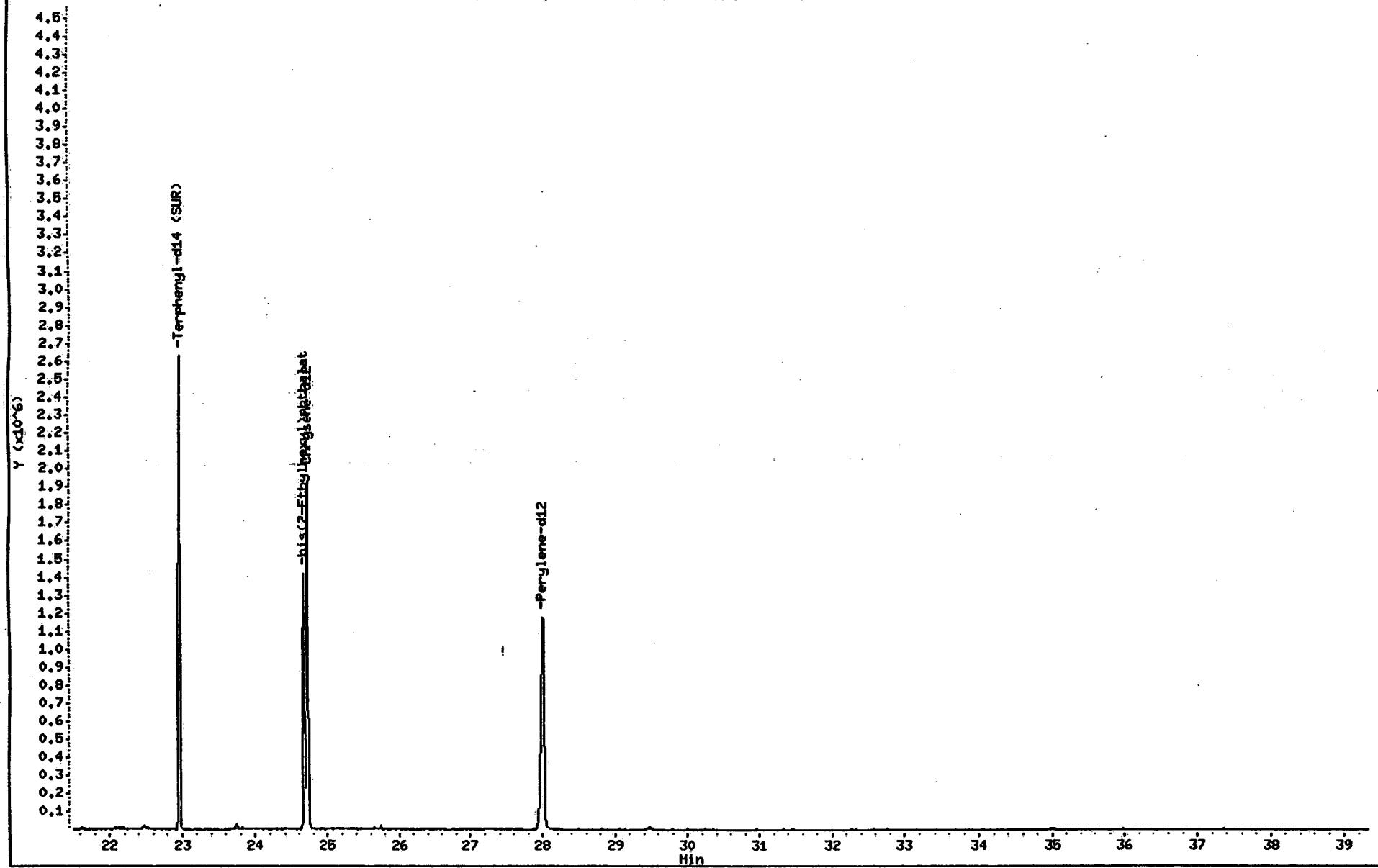
/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8114.d (Part 1 of 2)



Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8114.d
Date : 03-DEC-1999 01:01
Client ID: 19-6
Sample Info: 169027;1000;2;1;;
Purge Volume: 1000.0
Column phaset DB-5

Instrument: BNAMS3.i
Operator: BNAMS 1
Column diameter: 0.53

/chem/BNAMS3.i/625/11-23-99/02dec99.b/t8114.d (Part 2 of 2)



Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8114.d

Date : 03-DEC-1999 01:01

Client ID: 19-6

Instrument: BNAMS3.i

Sample Info: 169027;1000;2;1;;

Purge Volume: 1000.0

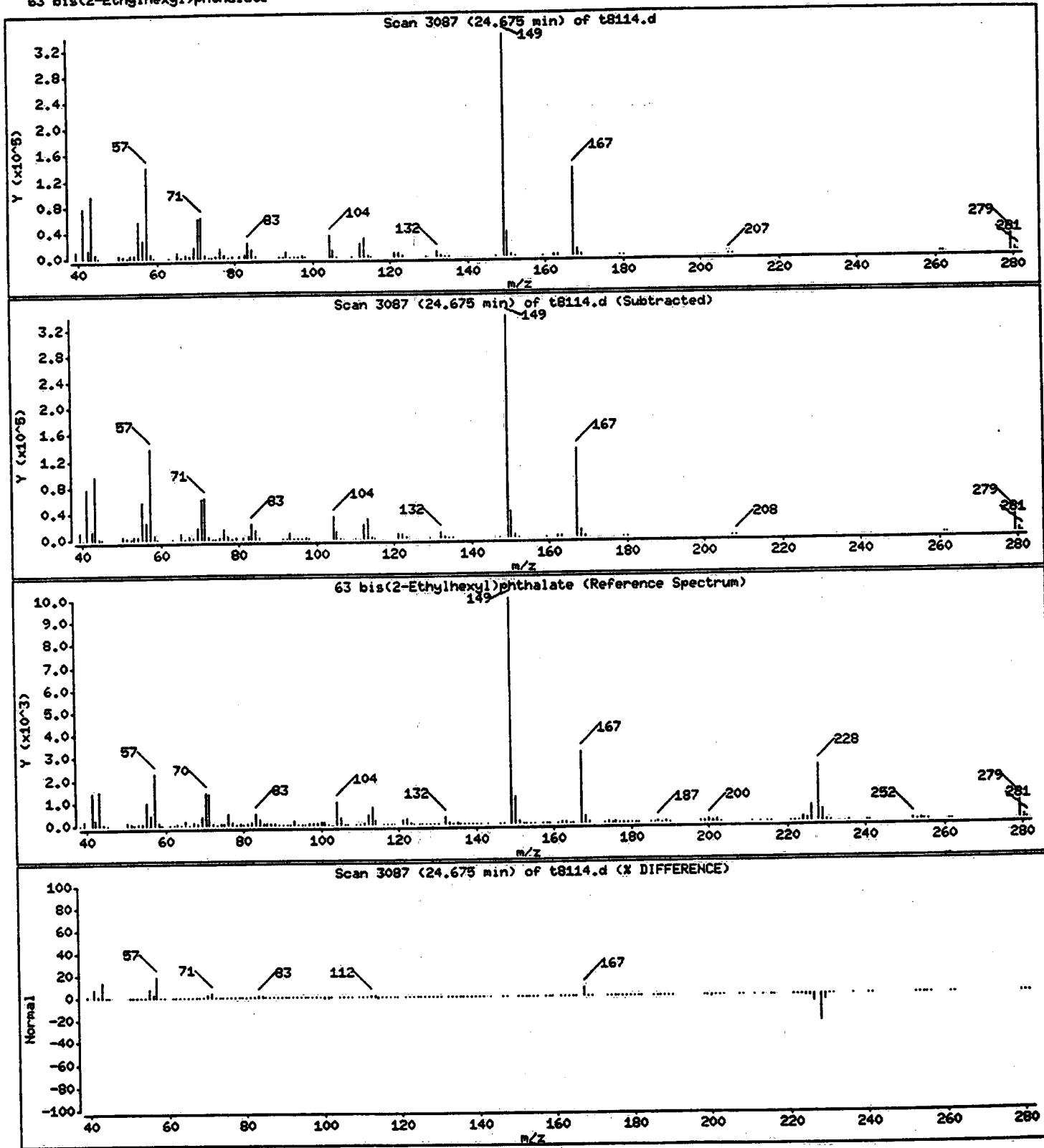
Operator: BNAMS 1

Column phase: DB-5

Column diameter: 0.53

63 bis(2-Ethylhexyl)phthalate

Concentration: 32 ug/L



Client ID: Field_Blank
Site: L.E. Carpenter

Lab Sample No: 169028
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Extracted: 11/22/99
Date Analyzed: 12/03/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8115.d

Matrix: WATER
Level: LOW
Sample Volume: 970 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
bis(2-Ethylhexyl)phthalate	ND	4.2

Data File: /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8115.d
Report Date: 03-Dec-1999 09:26

STL Envirotech

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS3.i/625/11-23-99/02dec99.b/t8115.d
Lab Smp Id: 169028 Client Smp ID: Field_Blank
Inj Date : 03-DEC-1999 01:50
Operator : BNAMS 1 Inst ID: BNAMS3.i
Smp Info : 169028;970;2;1;;
Misc Info : V250;BIS2PHTH;5079;143
Comment :
Method : /chem/BNAMS3.i/625/11-23-99/02dec99.b/BNA625b.m
Meth Date : 02-Dec-1999 13:38 B Quant Type: ISTD
Cal Date : 23-NOV-1999 13:47 Cal File: t7897.d
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: BIS2PHTH.sub
Target Version: 3.40
Processing Host: hpdl

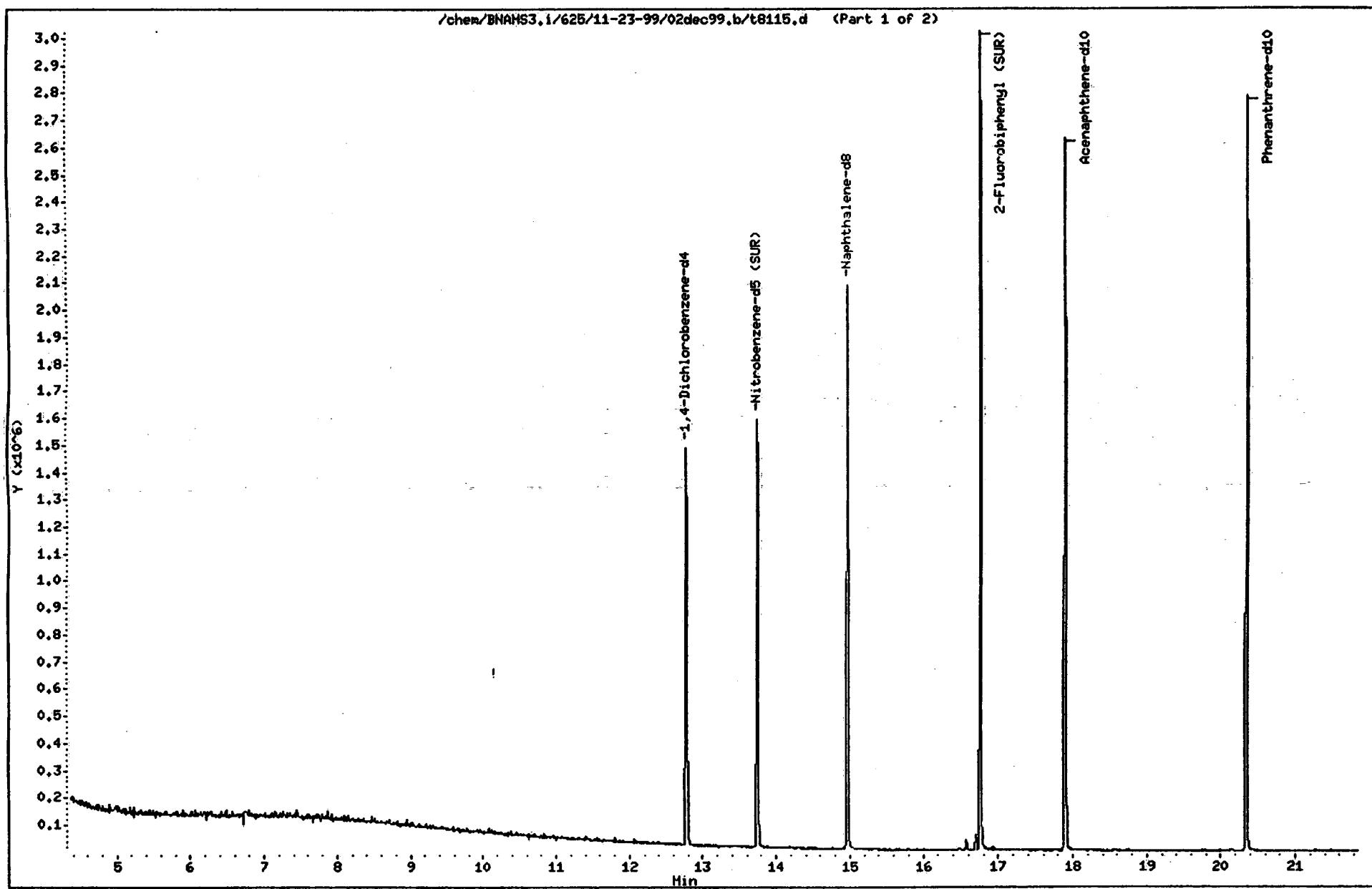
Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	970.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/ml)	FINAL (ug/L)
* 79 1,4-Dichlorobenzene-d4	152	12.777	12.779	(1.000)	306208	40.0000		
\$ 76 Nitrobenzene-d5 (SUR)	82	13.743	13.756	(0.918)	685417	51.1875	100	
* 80 Naphthalene-d8	136	14.965	14.973	(1.000)	1178639	40.0000		
\$ 77 2-Fluorobiphenyl (SUR)	172	16.758	16.767	(0.936)	1248433	41.9195	86	
* 82 Acenaphthene-d10	164	17.896	17.901	(1.000)	922537	40.0000		
* 83 Phenanthrene-d10	188	20.352	20.363	(1.000)	1459877	40.0000		
\$ 78 Terphenyl-d14 (SUR)	244	22.967	22.968	(0.929)	1293217	47.9877	99	
* 81 Chrysene-d12	240	24.721	24.746	(1.000)	1099976	40.0000		
* 84 Perylene-d12	264	28.007	28.030	(1.000)	1286053	40.0000		

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8115.d
Date : 03-DEC-1999 01:50
Client ID: Field_Blank
Sample Info: 169028;970;2;1;;
Purge Volume: 970.0
Column phase: DB-5

Instrument: BNAHS3.i
Operator: BNAHS 1
Column diameter: 0.53

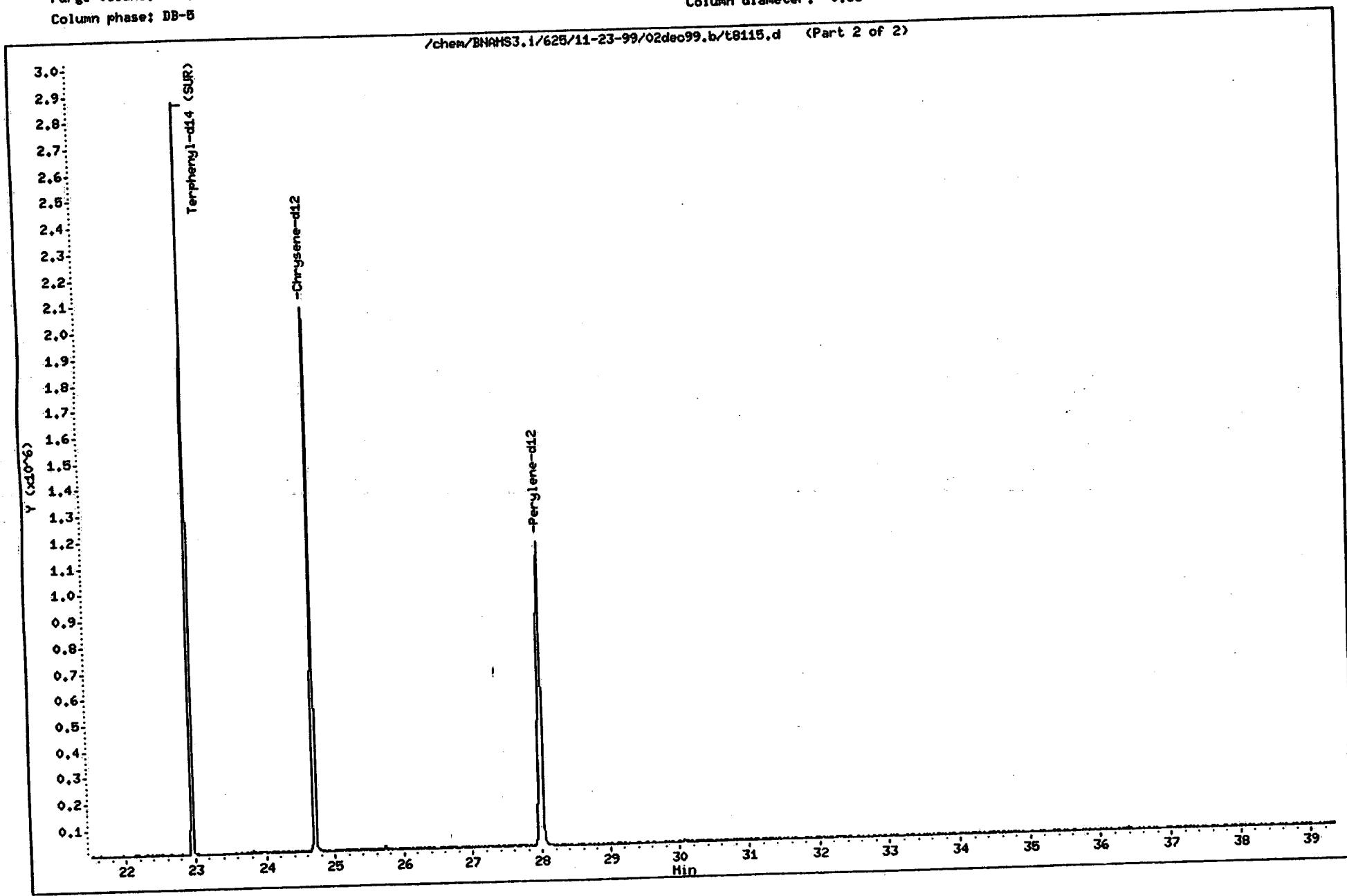


Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8115.d
Date : 03-DEC-1999 01:50
Client ID: Field_Blank
Sample Info: 169028;970;2;1;
Purge Volume: 970.0
Column phase: DB-5

Instrument: BNAHS3.i

Operator: BNAHS 1
Column diameter: 0.53

/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8115.d (Part 2 of 2)



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: T7891

DFTPP Injection Date: 11/23/99

Instrument ID: BNAMS3

DFTPP Injection Time: 0929

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	47.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	55.7
70	Less than 2.0% of mass 69	0.0 (0.1)1
127	40.0 - 60.0% of mass 198	47.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	16.1
365	Greater than 1.0% of mass 198	1.71
441	0.0 - 100.0% of mass 443	10.1 (76.6)2
442	40.0 - 110.0% of mass 198	68.5
443	17.0 - 23.0% of mass 442	13.2 (19.3)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	TSTD050	TSTD050	T7893	11/23/99	1039
02	TSTD120	TSTD120	T7894	11/23/99	1122
03	TSTD080	TSTD080	T7895	11/23/99	1210
04	TSTD020	TSTD020	T7896	11/23/99	1258
05	TSTD010	TSTD010	T7897	11/23/99	1347
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Data File: /chem/BNAMS3.i/628/11-23-99/23nov99.b/t7891.d

Date : 23-NOV-1999 09:29

Client ID:

Instrument: BNAMS3.i

Sample Info: TIDFT327

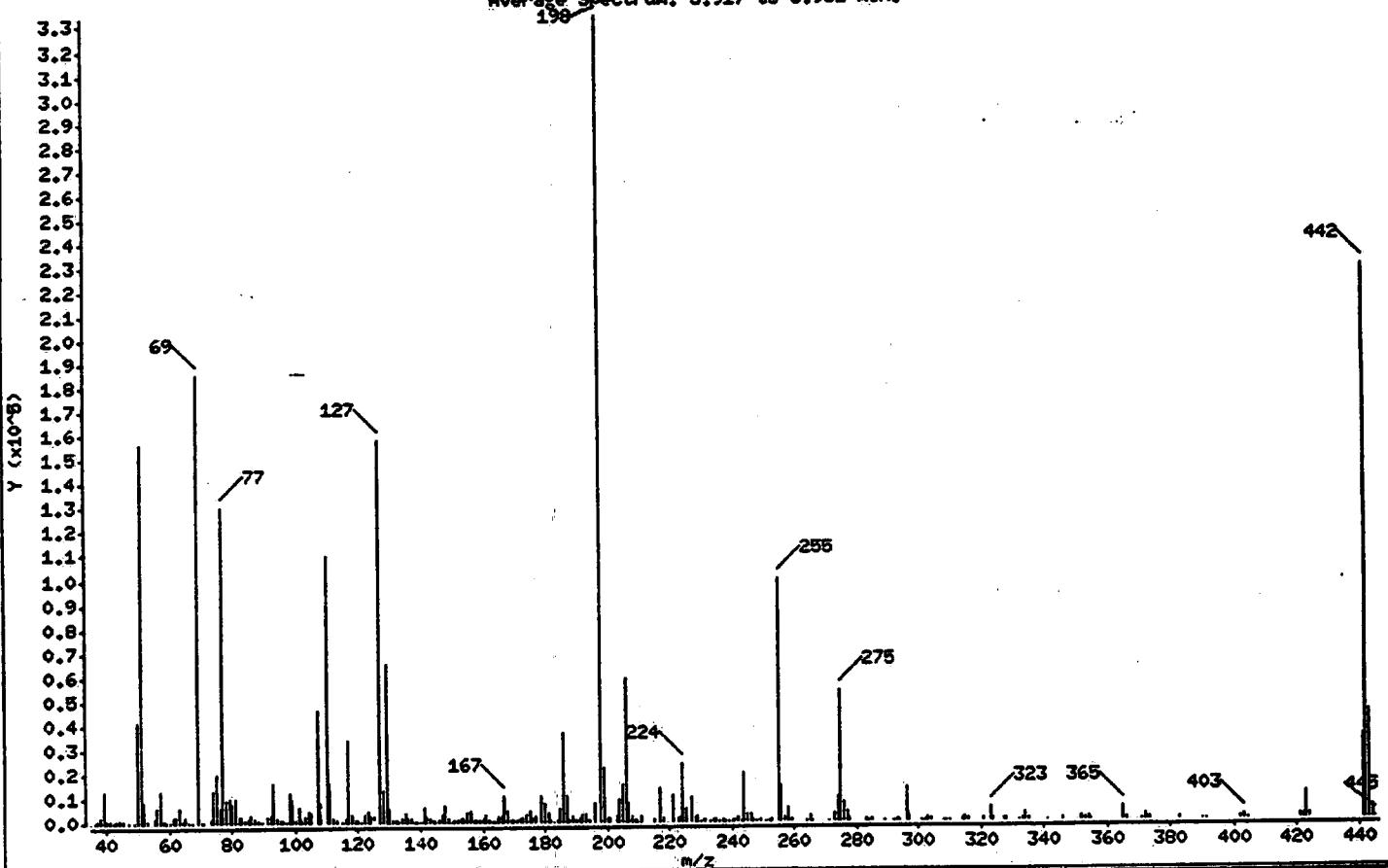
Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

1 dftpp

Average Spectrum: 5.917 to 5.931 min.



m/e	ION ABUNDANCE CRITERIA	X RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	46.96
68	Less than 2.00% of mass 69	0.00 (< 0.00)
69	Mass 69 relative abundance	55.70
70	Less than 2.00% of mass 69	0.04 (< 0.07)
127	40.00 - 60.00% of mass 198	47.29
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.62
275	10.00 - 30.00% of mass 198	16.09
365	Greater than 1.00% of mass 198	1.71
441	0.01 - 100.00% of mass 443	10.12 (< 76.57)
442	40.00 - 110.00% of mass 198	68.49
443	17.00 - 23.00% of mass 442	13.21 (< 19.29)

Data File: /chem/BNAHS3.i/625/11-23-99/23nov99.b/t7891.d

Date : 23-NOV-1999 09:29

Client ID:

Instrument: BNAHS3.i

Sample Info: TDFT327

Operator: BN62

Column phase: DB-5

Column diameter: 0.25

Data File: t7891.d

Spectrum: Average Spectrum: 5.917 to 5.931 min.

Location of Maximum: 198.00

Number of points: 263

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	138	110.00	109888	179.00	10617	259.00	733
37.00	797	111.00	15915	180.00	7562	264.00	114
38.00	2447	112.00	1788	181.00	3614	265.00	2039
39.00	13246	113.00	534	182.00	615	266.00	364
40.00	818	115.00	114	183.00	109	271.00	121
41.00	1059	116.00	1432	184.00	963	273.00	3334
42.00	156	117.00	33728	185.00	5147	274.00	10075
43.00	649	118.00	2800	186.00	37120	275.00	53664
44.00	1277	119.00	571	187.00	10374	276.00	7385
45.00	489	120.00	667	188.00	1013	277.00	3841
47.00	115	121.00	144	189.00	2542	278.00	631
49.00	325	122.00	3246	190.00	553	283.00	465
50.00	41448	123.00	4969	191.00	1256	284.00	108
51.00	156844	124.00	2302	192.00	3238	285.00	741
52.00	8125	125.00	2476	193.00	3323	289.00	108
53.00	441	127.00	157632	194.00	724	292.00	118
55.00	1445	128.00	12953	196.00	7752	293.00	877
56.00	6234	129.00	64888	198.00	333440	294.00	114
57.00	12884	130.00	5610	199.00	22072	296.00	14042
58.00	706	131.00	943	200.00	1375	297.00	1973
59.00	129	132.00	422	201.00	1323	301.00	133
60.00	124	133.00	341	203.00	1962	302.00	121
61.00	2130	134.00	1472	204.00	9039	303.00	1761
62.00	2336	135.00	4008	205.00	15476	304.00	449
63.00	5789	136.00	1463	206.00	59088	308.00	102
64.00	967	137.00	1842	207.00	8024	309.00	105
65.00	2649	138.00	164	208.00	2011	310.00	207
66.00	107	139.00	279	209.00	689	314.00	863
67.00	199	140.00	247	210.00	231	315.00	1364
69.00	185728	141.00	6306	211.00	2098	316.00	828
70.00	126	142.00	2082	215.00	633	321.00	566
71.00	270	143.00	1342	217.00	13767	323.00	5468
73.00	1541	144.00	432	218.00	1663	324.00	990
74.00	12961	145.00	322	221.00	10365	327.00	882
75.00	19936	146.00	1118	223.00	1589	328.00	463

Data File: /chem/BNAHS3.i/625/11-23-99/23nov99.b/t7891.d

Date : 23-NOV-1999 09:29

Client ID:

Instrument: BNAHS3.i

Sample Info: TDFT327

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: t7891.d

Spectrum: Average Spectrum: 5.917 to 5.931 min.

Location of Maximum: 198.00

Number of points: 263

m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	5963	147.00	2779	224.00	23816	332.00	154
77.00	130504	148.00	6914	225.00	5398	333.00	551
78.00	8837	149.00	1271	227.00	9584	334.00	3195
79.00	9848	150.00	340	228.00	1418	335.00	633
80.00	7631	151.00	900	229.00	2026	341.00	345
81.00	9633	152.00	398	230.00	307	346.00	864
82.00	2333	153.00	1760	231.00	968	352.00	1208
83.00	2381	154.00	1334	233.00	188	353.00	914
84.00	474	155.00	3468	234.00	625	354.00	1522
85.00	1551	156.00	4406	235.00	670	355.00	379
86.00	2791	157.00	1029	236.00	376	365.00	5693
87.00	1183	158.00	1066	237.00	611	366.00	803
88.00	469	159.00	774	238.00	104	371.00	280
89.00	110	160.00	1763	239.00	156	372.00	2651
91.00	2408	161.00	2745	240.00	238	373.00	527
92.00	2707	162.00	1091	241.00	564	383.00	714
93.00	16052	163.00	348	242.00	1243	390.00	169
94.00	1238	164.00	364	243.00	297	391.00	134
95.00	507	165.00	2111	244.00	20080	402.00	1062
96.00	805	166.00	1958	245.00	2965	403.00	1460
97.00	202	167.00	10586	246.00	3322	404.00	355
98.00	12005	168.00	4768	247.00	666	421.00	1402
99.00	9220	169.00	816	248.00	119	422.00	1284
100.00	930	170.00	410	249.00	710	423.00	10650
101.00	5857	171.00	676	251.00	149	424.00	1909
102.00	478	172.00	1240	252.00	129	441.00	33729
103.00	2493	173.00	1230	253.00	587	442.00	228352
104.00	4313	174.00	2750	255.00	99760	443.00	44048
105.00	3785	175.00	4854	256.00	14655	444.00	3893
107.00	46032	176.00	1507	257.00	1298	445.00	144
108.00	7899	177.00	2661	258.00	5632		

Data File: /chem/BNAMS3.i/625/11-23-99/23nov99.b/t7891.d

Date : 23-NOV-1999 09:29

Client ID:

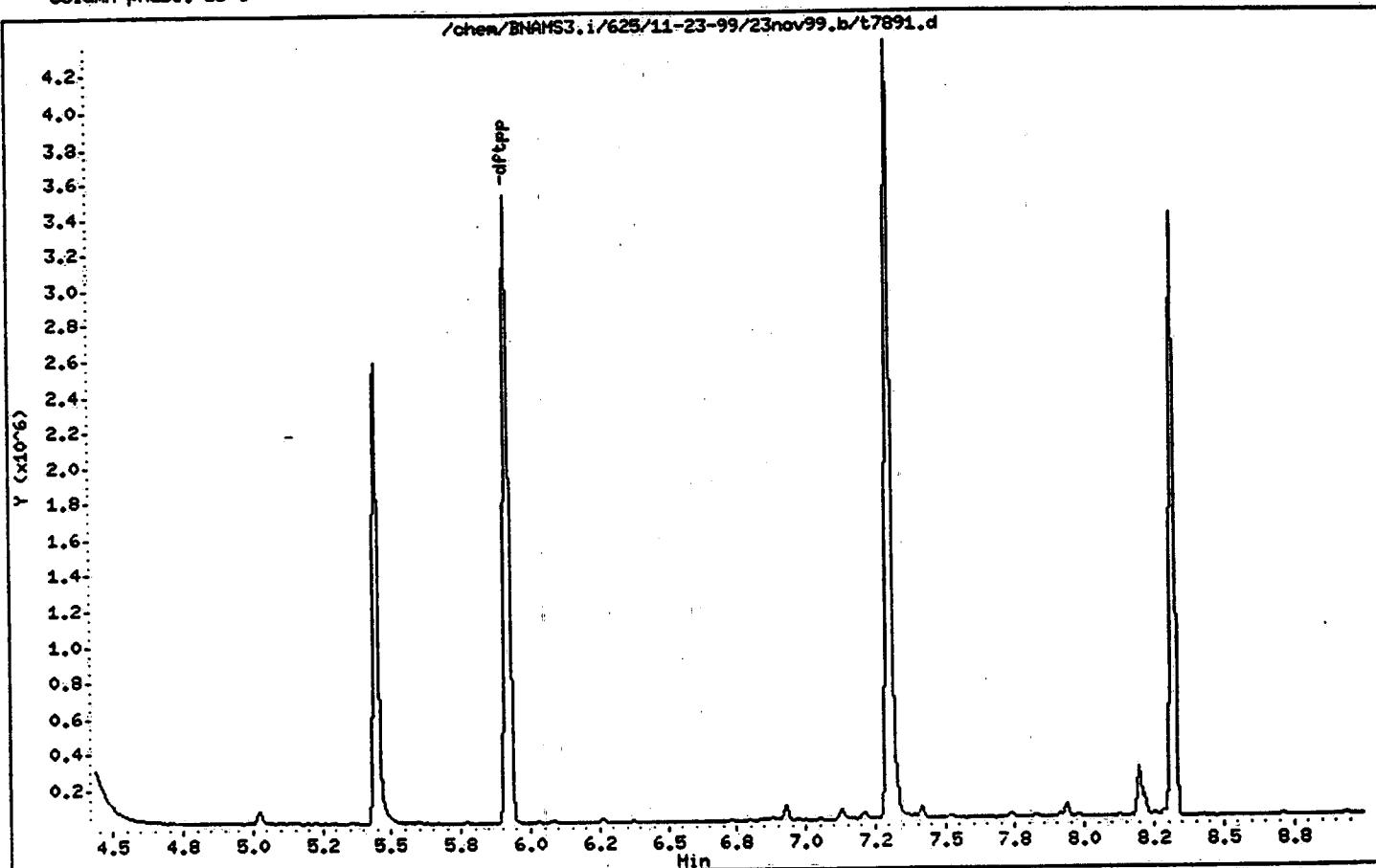
Instrument: BNAMS3.i

Sample Info: TDFT327

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: T8098

DFTPP Injection Date: 12/02/99

Instrument ID: BNAMS3

DFTPP Injection Time: 1240

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	53.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	62.5
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	48.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	18.4
365	Greater than 1.0% of mass 198	1.84
441	0.0 - 100.0% of mass 443	10.1 (76.0)2
442	40.0 - 110.0% of mass 198	67.9
443	17.0 - 23.0% of mass 442	13.2 (19.5)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 TSTD336	TSTD336	T8099	12/02/99	1258
02 19-8	169024	T8101	12/02/99	1434
03 19-7	169025	T8112	12/02/99	2325
04 19-9	169026	T8113	12/03/99	0013
05 19-6	169027	T8114	12/03/99	0101
06 FIELD_BLANK	169028	T8115	12/03/99	0150
07				
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13				
14				
15				
16				
17				
18				

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8098.d

Date : 02-DEC-1999 12:40

Client ID:

Sample Info: TDFT336

Instrument: BNAHS3.i

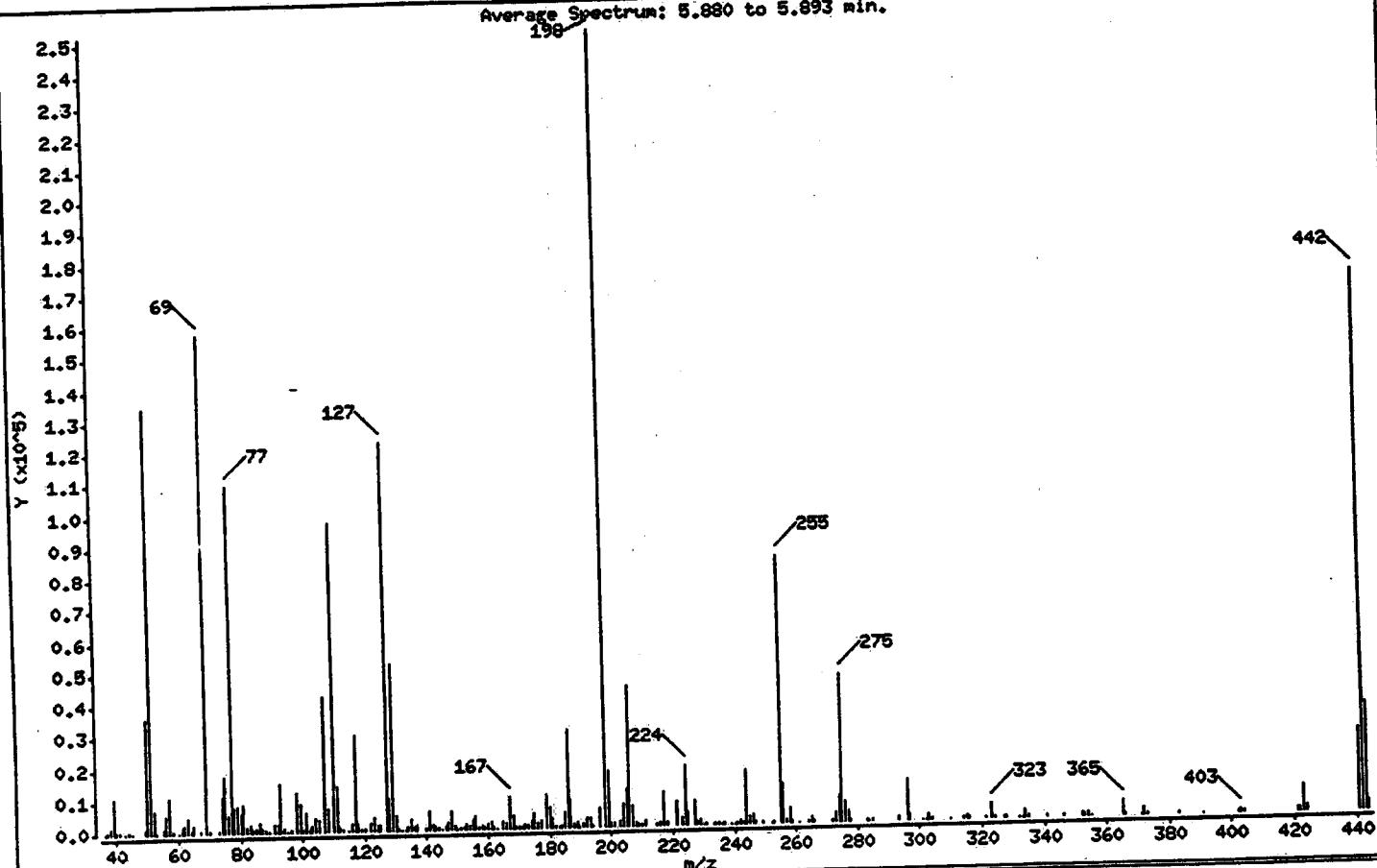
Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

1 dftpp

Average Spectrum: 5.880 to 5.893 min.



m/e	ION ABUNDANCE CRITERIA	X RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
81	30.00 - 60.00% of mass 198	53.40
68	Less than 2.00% of mass 69	0.00 (< 0.00)
69	Mass 69 relative abundance	62.48
70	Less than 2.00% of mass 69	0.29 (< 0.46)
127	40.00 - 60.00% of mass 198	48.65
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.82
275	10.00 - 30.00% of mass 198	18.37
365	Greater than 1.00% of mass 198	1.84
441	0.01 - 100.00% of mass 443	10.06 (< 76.03)
442	40.00 - 110.00% of mass 198	67.94
443	17.00 - 23.00% of mass 442	13.24 (< 19.48)

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8098.d

Date : 02-DEC-1999 12:40

Client ID:

Instrument: BNAHS3.i

Sample Info: TDFT336

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: t8098.d

Spectrum: Average Spectrum: 5.880 to 9.893 min.

Location of Maximum: 198.00

Number of points: 245

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	170	112.00	1580	181.00	2945	259.00	703
37.00	610	113.00	497	182.00	462	261.00	107
38.00	1708	115.00	130	183.00	144	264.00	329
39.00	10757	116.00	2324	184.00	571	265.00	1648
40.00	623	117.00	30360	185.00	4763	266.00	517
41.00	460	118.00	2172	186.00	30704	272.00	294
43.00	133	119.00	328	187.00	8520	273.00	2892
44.00	598	120.00	463	188.00	979	274.00	8113
45.00	246	122.00	2601	189.00	1990	275.00	46344
49.00	1430	123.00	3987	190.00	153	276.00	6594
50.00	36064	124.00	1992	191.00	1079	277.00	3278
51.00	134656	125.00	1660	192.00	2691	278.00	605
52.00	6818	127.00	122720	193.00	2687	283.00	320
53.00	233	128.00	10039	194.00	639	284.00	155
55.00	919	129.00	52216	196.00	5678	285.00	544
56.00	5130	130.00	4506	198.00	252224	293.00	875
57.00	10774	131.00	812	199.00	17192	296.00	12919
58.00	400	132.00	185	200.00	1277	297.00	1583
60.00	106	133.00	132	201.00	1043	301.00	111
61.00	1571	134.00	1263	203.00	1705	302.00	118
62.00	2437	135.00	3489	204.00	6718	303.00	1483
63.00	4809	136.00	1330	205.00	11498	304.00	335
64.00	825	137.00	1532	206.00	43936	310.00	123
65.00	2222	140.00	571	207.00	6206	314.00	876
67.00	333	141.00	5569	208.00	1326	315.00	1279
69.00	157568	142.00	1507	209.00	513	316.00	668
70.00	721	143.00	1086	210.00	630	321.00	401
73.00	636	144.00	307	211.00	1569	323.00	4473
74.00	11057	145.00	223	215.00	397	324.00	771
75.00	17496	146.00	1068	216.00	1027	327.00	764
76.00	5405	147.00	2493	217.00	10245	328.00	302
77.00	109392	148.00	5529	218.00	1296	332.00	134
78.00	7782	149.00	1143	221.00	7480	333.00	136
79.00	8328	150.00	274	223.00	2141	334.00	2521
80.00	5785	151.00	638	224.00	18782	335.00	450

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8098.d

Date : 02-DEC-1999 12:40

Client ID:

Instrument: BNAHS3.i

Sample Info: TDFT336

Operator: BNAZ

Column phase: DB-5

Column diameter: 0.25

Data File: t8098.d

Spectrum: Average Spectrum: 5.890 to 5.893 min.

Location of Maximum: 198.00

Number of points: 245

m/z	Y	m/z	Y	m/z	Y	m/z	Y
81.00	8454	152.00	367	225.00	4298	341.00	351
82.00	1981	153.00	1598	227.00	7762	346.00	612
83.00	2091	154.00	1117	228.00	1057	352.00	1073
84.00	895	155.00	2670	229.00	1702	353.00	842
85.00	1120	156.00	4030	230.00	108	354.00	1227
86.00	2821	157.00	778	231.00	702	355.00	224
87.00	1111	158.00	1097	233.00	115	365.00	4640
88.00	410	159.00	849	234.00	535	366.00	558
89.00	167	160.00	1737	235.00	538	371.00	212
91.00	2347	161.00	2458	236.00	130	372.00	2088
92.00	2336	162.00	743	237.00	588	373.00	392
93.00	14834	163.00	121	239.00	188	383.00	362
94.00	1029	165.00	2160	240.00	262	391.00	134
95.00	252	166.00	1594	241.00	535	402.00	830
96.00	617	167.00	9946	242.00	893	403.00	1113
98.00	11891	168.00	4027	243.00	679	404.00	290
99.00	8450	169.00	868	244.00	16864	421.00	1089
100.00	735	170.00	422	245.00	2293	422.00	945
101.00	5588	171.00	541	246.00	2948	423.00	8349
102.00	406	172.00	1276	247.00	420	424.00	1653
103.00	2024	173.00	1435	249.00	583	441.00	25394
104.00	4110	174.00	2545	252.00	135	442.00	171328
105.00	3460	175.00	4532	253.00	319	443.00	33392
107.00	42424	176.00	1612	255.00	84936	444.00	2816
108.00	6950	177.00	2128	256.00	11968		
110.00	97320	179.00	10153	257.00	1071		
111.00	14174	180.00	6486	258.00	4436		

Data File: /chem/BNAHS3.i/625/11-23-99/02dec99.b/t8098.d

Date : 02-DEC-1999 12:40

Client ID:

Sample Info: TDFT336

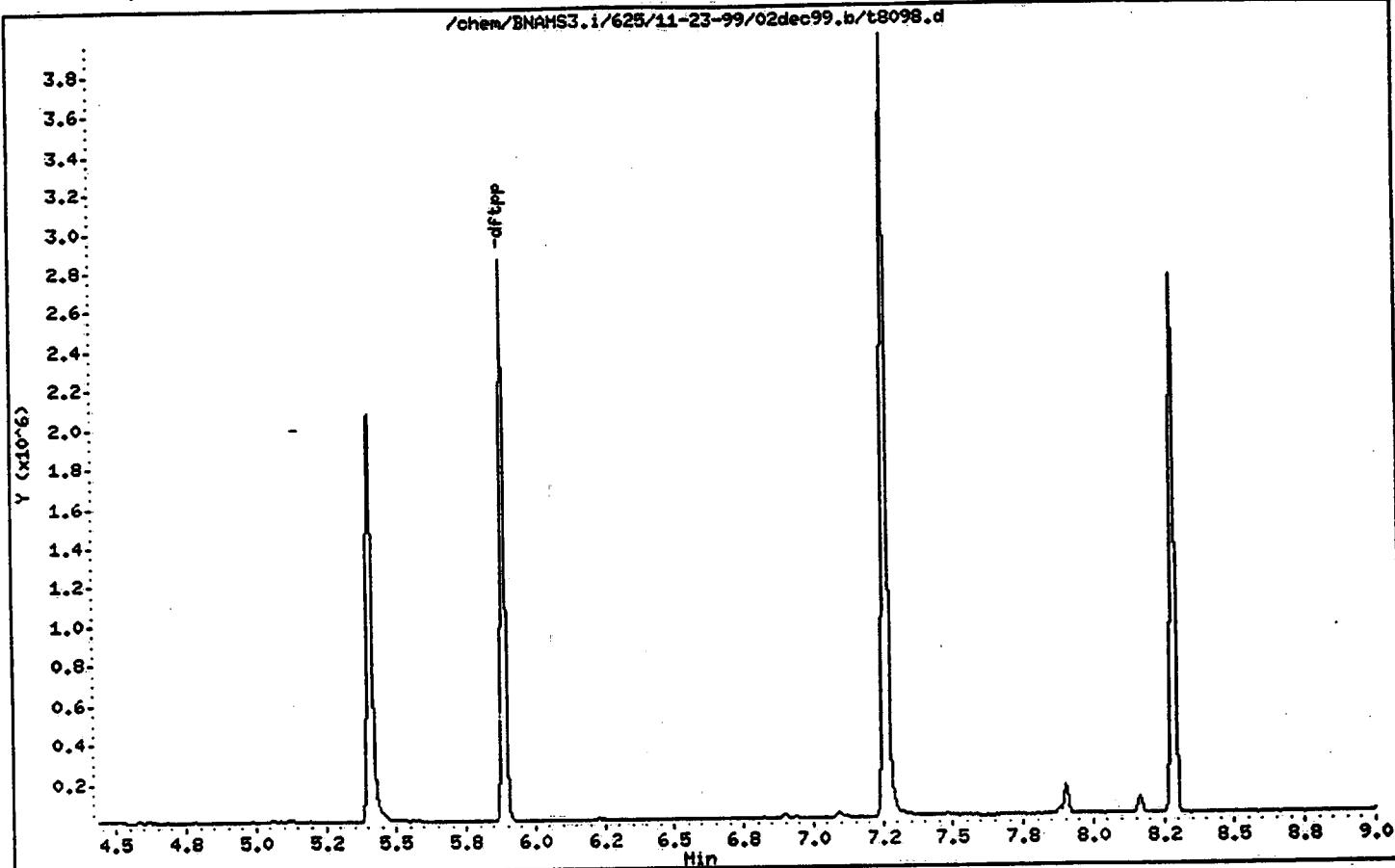
Instrument: BNAHS3.i

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

/chem/BNAHS3.i/625/11-23-99/02dec99.b/t8098.d



SEMI-VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab File ID: T8162

DFTPP Injection Date: 12/06/99

Instrument ID: BNAMS3

DFTPP Injection Time: 1151

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.1
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	65.0
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	52.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.2
365	Greater than 1.0% of mass 198	1.48
441	0.0 - 100.0% of mass 443	12.0 (75.8)2
442	40.0 - 110.0% of mass 198	80.4
443	17.0 - 23.0% of mass 442	15.8 (19.6)3

1-Value is % mass 69

2-Value is % mass 443

3-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT ID	LAB SAMPLE No.	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01 TSTD050	TSTD050	T8163	12/06/99	1208
02 TSTD120	TSTD120	T8164	12/06/99	1301
03 TSTD080	TSTD080	T8165	12/06/99	1349
04 TSTD020	TSTD020	T8166	12/06/99	1437
05 TSTD010	TSTD010	T8167	12/06/99	1524
06 WB326	WB326	T8170	12/06/99	1746
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Data File: /chem/BNAMS3.i/625/12-06-99/06dec99.b/t8162.d

Date : 06-DEC-1999 11:51

Client ID:

Instrument: BNAMS3.i

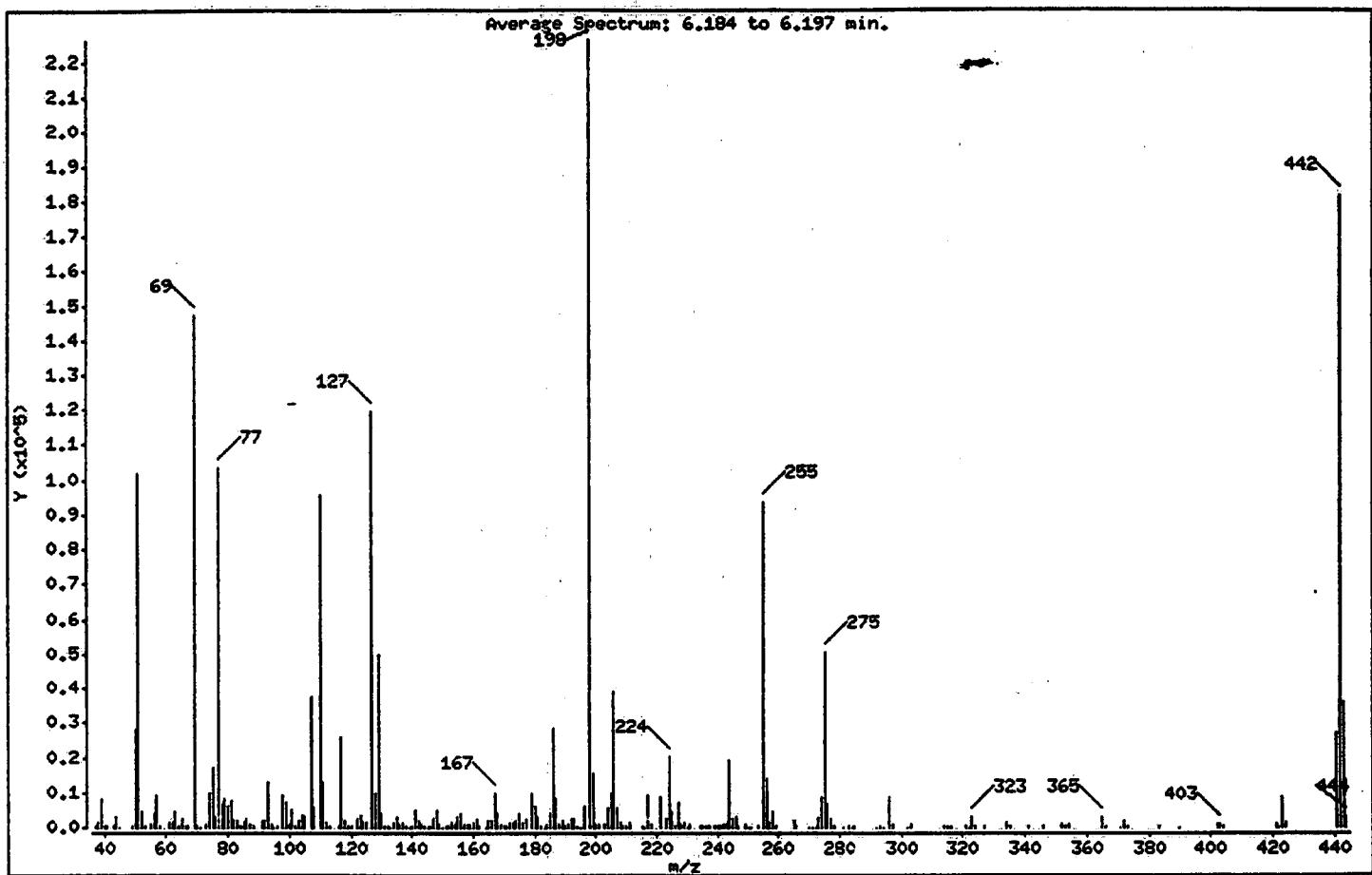
Sample Info: TDFT340

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	X RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	45.12
68	Less than 2.00% of mass 69	0.00 (< 0.00)
69	Mass 69 relative abundance	64.97
70	Less than 2.00% of mass 69	0.18 (< 0.28)
127	40.00 - 60.00% of mass 198	52.78
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.90
275	10.00 - 30.00% of mass 198	22.21
365	Greater than 1.00% of mass 198	1.48
441	0.01 - 100.00% of mass 443	11.95 (> 75.77)
442	40.00 - 110.00% of mass 198	80.36
443	17.00 - 23.00% of mass 442	15.77 (< 19.63)

Data File: /chem/BNAMS3.i/625/12-06-99/06dec99.b/t8162.d

Date : 06-DEC-1999 11:51

Client ID:

Instrument: BNAMS3.i

Sample Info: TDFT340

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

Data File: t8162.d

Spectrum: Average Spectrum: 6.184. to 6.197 min.

Location of Maximum: 198.00

Number of points: 244

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	396	113.00	342	181.00	3161	257.00	1340
38.00	1650	116.00	676	182.00	345	258.00	4871
39.00	8511	117.00	25824	183.00	124	259.00	674
40.00	419	118.00	2008	184.00	785	265.00	2027
41.00	500	119.00	509	185.00	4113	266.00	467
43.00	432	120.00	369	186.00	28376	270.00	104
44.00	2995	122.00	2490	187.00	8359	271.00	234
45.00	209	123.00	3638	188.00	892	272.00	152
49.00	581	124.00	1622	189.00	1850	273.00	3235
50.00	28208	125.00	1585	190.00	334	274.00	8789
51.00	102088	127.00	119408	191.00	1053	275.00	50248
52.00	4927	128.00	9842	192.00	2381	276.00	6867
53.00	321	129.00	50128	193.00	2612	277.00	2787
55.00	1061	130.00	4025	194.00	623	278.00	432
56.00	4048	131.00	668	195.00	256	281.00	104
57.00	9210	132.00	422	196.00	5986	283.00	367
58.00	332	133.00	136	198.00	226240	284.00	116
61.00	1494	134.00	1345	199.00	15603	285.00	512
62.00	1492	135.00	3268	200.00	867	292.00	103
63.00	4712	136.00	1237	201.00	946	293.00	652
64.00	626	137.00	1521	203.00	1140	294.00	122
65.00	2400	138.00	340	204.00	8497	296.00	9084
66.00	447	139.00	104	205.00	10029	297.00	1228
67.00	391	140.00	565	206.00	39208	302.00	104
69.00	146944	141.00	5035	207.00	5784	303.00	1005
70.00	409	142.00	1836	208.00	1383	314.00	462
71.00	133	143.00	1119	209.00	522	315.00	768
73.00	1235	144.00	335	210.00	342	316.00	382
74.00	10067	145.00	193	211.00	1423	321.00	339
75.00	16904	146.00	660	215.00	456	322.00	109
76.00	2907	147.00	2662	216.00	215	323.00	2866
77.00	103400	148.00	5090	217.00	9370	324.00	439
78.00	6883	149.00	1000	218.00	1249	327.00	577
79.00	8112	150.00	250	221.00	8892	334.00	1786
80.00	6024	151.00	769	223.00	2465	335.00	367

Data File: /chem/BNAMS3.i/625/12-06-99/06dec99.b/t8162.d

Date : 06-DEC-1999 11:51

Client ID:

Instrument: BNAMS3.i

Sample Info: TDFT340

Operator: BNA2

Column diameter: 0.25

Column phase: DB-5

Data File: t8162.d

Spectrum: Average Spectrum: 6.184 to 6.197 min.

Location of Maximum: 198.00

Number of points: 244

m/z	Y	m/z	Y	m/z	Y	m/z	Y
31.00	7833	152.00	655	224.00	20392	341.00	315
82.00	2004	153.00	1687	225.00	4897	346.00	394
83.00	1919	154.00	1134	226.00	438	352.00	876
84.00	363	155.00	2938	227.00	7516	353.00	520
85.00	1602	156.00	4218	228.00	1160	354.00	785
86.00	2575	157.00	1153	229.00	1568	365.00	3344
87.00	1011	158.00	1179	230.00	163	366.00	355
88.00	458	159.00	797	231.00	879	371.00	174
91.00	1899	160.00	1546	234.00	592	372.00	1957
92.00	2124	161.00	2476	235.00	519	373.00	385
93.00	13047	162.00	591	236.00	364	383.00	379
94.00	863	164.00	129	237.00	789	390.00	144
95.00	182	165.00	2064	239.00	282	402.00	799
96.00	703	166.00	1907	240.00	263	403.00	1205
98.00	9444	167.00	9968	241.00	462	404.00	329
99.00	7450	168.00	4316	242.00	1191	421.00	1041
100.00	839	169.00	1007	243.00	999	422.00	123
101.00	4950	170.00	370	244.00	19168	423.00	8830
102.00	406	171.00	472	245.00	2827	424.00	1679
103.00	1928	172.00	1303	246.00	2959	441.00	27032
104.00	3564	173.00	1329	247.00	748	442.00	181760
105.00	3090	174.00	2271	249.00	789	443.00	35660
107.00	37592	175.00	4225	250.00	106	444.00	3299
108.00	5636	176.00	1523	251.00	106		
110.00	95568	177.00	2507	253.00	463		
111.00	13224	179.00	9813	255.00	93760		
112.00	1689	180.00	6120	256.00	14006		

Data File: /chem/BNAHS3.1/625/12-06-99/06dec99.b/t8162.d

Date : 06-DEC-1999 11:51

Client ID:

Instrument: BNAHS3.i

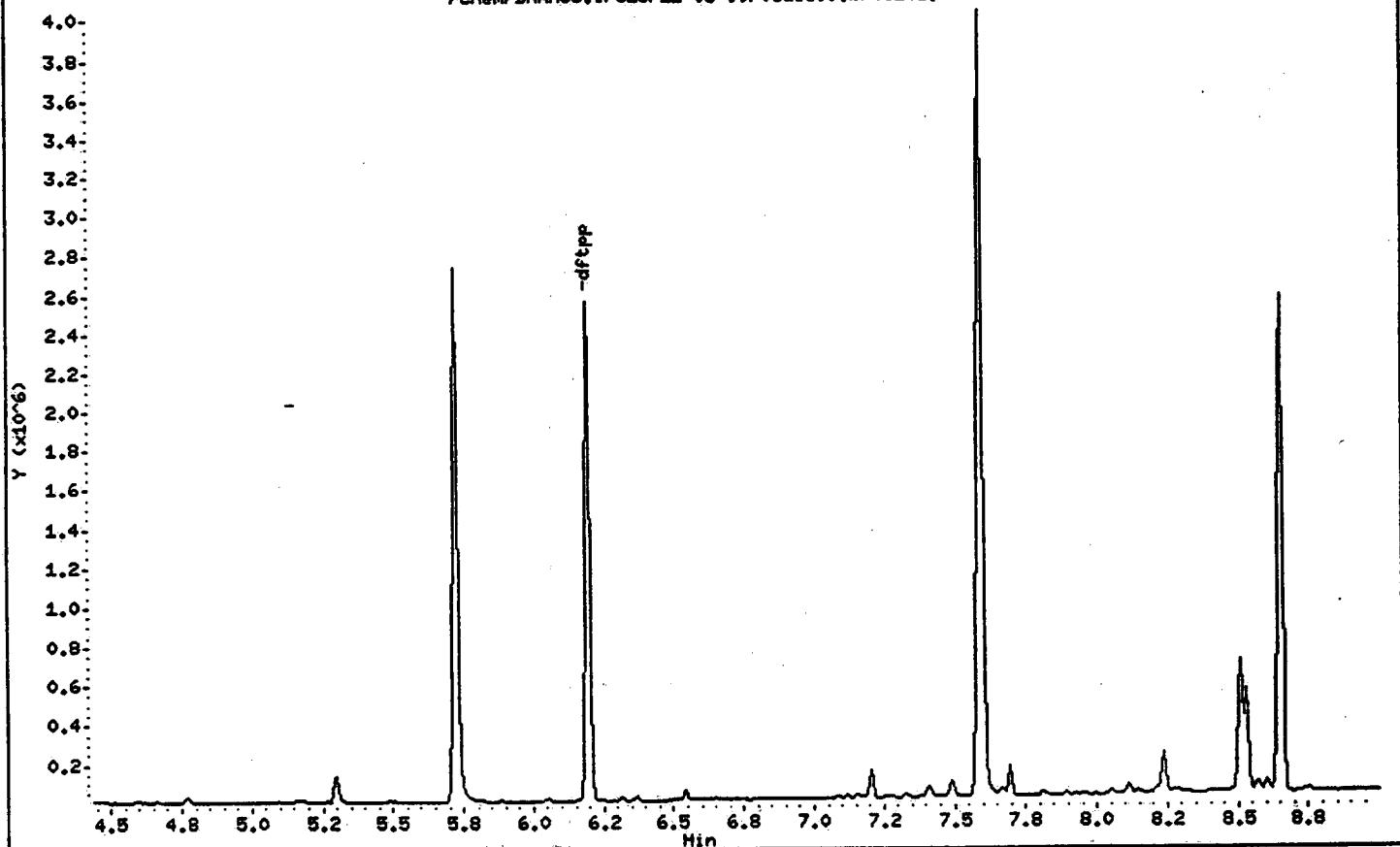
Sample Info: TDFT340

Operator: BNA2

Column phase: DB-5

Column diameter: 0.25

/chem/BNAHS3.i/625/12-06-99/06dec99.b/t8162.d



SEMIVOLATILE METHOD BLANK SUMMARY

WB326

Matrix: WATER

Date Analyzed: 12/06/99

Level: LOW

Time Analyzed: 1746

Instrument ID: BNAMS3

Lab File ID: T8170

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

CLIENT ID.	LAB SAMPLE NO	LAB FILE ID	DATE ANALYZED
01 19-8	169024	T8101	12/02/99
02 19-7	169025	T8112	12/02/99
03 19-9	169026	T8113	12/03/99
04 19-6	169027	T8114	12/03/99
05 FIELD_BLANK	169028	T8115	12/03/99
06			
07			
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12			
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29			
30			

COMMENTS:

Client ID: WB326
Site:

Lab Sample No: WB326
Lab Job No: V250

Date Sampled: _____
Date Received: _____
Date Extracted: 11/22/99
Date Analyzed: 12/06/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8170.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
N-Nitrosodimethylamine	ND	0.8
bis(2-Chloroethyl)ether	ND	0.7
1,3-Dichlorobenzene	ND	1.4
1,4-Dichlorobenzene	ND	1.5
1,2-Dichlorobenzene	ND	1.2
bis(2-chloroisopropyl)ether	ND	0.8
N-Nitroso-di-n-propylamine	ND	1.2
Hexachloroethane	ND	2.2
Nitrobenzene	ND	0.5
Isophorone	ND	0.5
bis(2-Chloroethoxy)methane	ND	0.8
1,2,4-Trichlorobenzene	ND	1.1
Naphthalene	ND	0.8
4-Chloroaniline	ND	0.8
Hexachlorobutadiene	ND	1.8
2-Methylnaphthalene	ND	0.8
Hexachlorocyclopentadiene	ND	1.2
2-Chloronaphthalene	ND	0.6
2-Nitroaniline	ND	0.6
Dimethylphthalate	ND	0.5
Acenaphthylene	ND	0.9
2,6-Dinitrotoluene	ND	0.7
3-Nitroaniline	ND	1.8
Acenaphthene	ND	0.8
Dibenzofuran	ND	0.7
2,4-Dinitrotoluene	ND	0.8
Diethylphthalate	ND	0.5
4-Chlorophenyl-phenylether	ND	0.8
Fluorene	ND	0.6
4-Nitroaniline	ND	0.8
N-Nitrosodiphenylamine	ND	0.4
4-Bromophenyl-phenylether	ND	0.7
Hexachlorobenzene	ND	0.6
Phenanthrene	ND	0.5

Client ID: WB326
Site:

Lab Sample No: WB326
Lab Job No: V250

Date Sampled: _____
Date Received: _____
Date Extracted: 11/22/99
Date Analyzed: 12/06/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8170.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
METHOD 625

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Anthracene	ND	0.6
Carbazole	ND	0.8
Di-n-butylphthalate	ND	0.6
Fluoranthene	ND	0.6
Pyrene	ND	0.7
Benzidine	ND	5.8
Butylbenzylphthalate	ND	0.5
3,3'-Dichlorobenzidine	ND	3.5
Benzo(a)anthracene	ND	0.6
Chrysene	ND	0.7
bis(2-Ethylhexyl)phthalate	ND	4.1
Di-n-octylphthalate	ND	0.4
Benzo(b)fluoranthene	ND	0.6
Benzo(k)fluoranthene	ND	0.7
Benzo(a)pyrene	ND	0.6
Indeno(1,2,3-cd)pyrene	ND	0.8
Dibenz(a,h)anthracene	ND	0.7
Benzo(g,h,i)perylene	ND	0.8
Pyridine	ND	10
Aniline	ND	0.5
Benzyl Alcohol	ND	0.8
1,2-Diphenylhydrazine	ND	0.8
Diphenyl	ND	10
Acetophenone	ND	10
1,4-Dioxane	ND	0.8
Benzaldehyde	ND	10
Caprolactum	ND	10
Atrazine	ND	10

Client ID: WB326
Site:

Lab Sample No: WB326
Lab Job No: V250

Date Sampled: _____
Date Received: _____
Date Extracted: 11/22/99
Date Analyzed: 12/06/99
GC Column: DB-5
Instrument ID: BNAMS3.i
Lab File ID: t8170.d

Matrix: WATER
Level: LOW
Sample Volume: 1000 ml
Extract Final Volume: 2.0 ml
Dilution Factor: 1.0

SEMI-VOLATILE ORGANICS - GC/MS
TENTATIVELY IDENTIFIED COMPOUNDS
METHOD 625

COMPOUND NAME	RT	EST. CONC. ug/l	Q
1. NO SEMI-VOLATILE ORGANIC COMPOUNDS FOUND			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
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27.			
28.			
29.			
30.			
TOTAL ESTIMATED CONCENTRATION		0.0	

Data File: /chem/BNAMS3.i/625/12-06-99/06dec99.b/t8170.d
Report Date: 07-Dec-1999 14:00

STL Envirotech

SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS

Data file : /chem/BNAMS3.i/625/12-06-99/06dec99.b/t8170.d
Lab Smp Id: WB326 Client Smp ID: BN
Inj Date : 06-DEC-1999 17:46 ~~8~~
Operator : BNAMS 1 Inst ID: BNAMS3.i
Smp Info : WB326;1000;2;1;;
Misc Info : WB326;BN;
Comment :
Method : /chem/BNAMS3.i/625/12-06-99/06dec99.b/BNA625b.m
Meth Date : 06-Dec-1999 16:57 pat Quant Type: ISTD
Cal Date : 06-DEC-1999 15:24 Cal File: t8167.d
Als bottle: 8 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: allBNb.sub
Target Version: 3.40
Processing Host: hpdl

Concentration Formula: Amt * DF * 1000*Vt/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vt	2.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ug/ml)	FINAL (ug/L)
* 75 1,4-Dichlorobenzene-d4	152	13.076	13.076 (1.000)		367316	40.0000		
\$ 76 Nitrobenzene-d5 (SUR)	82	14.035	14.031 (0.920)		590731	44.8246	90	
* 80 Naphthalene-d8	136	15.263	15.262 (1.000)		1361747	40.0000		
\$ 77 2-Fluorobiphenyl (SUR)	172	17.050	17.046 (0.938)		1113411	35.1884	70	
* 82 Acenaphthene-d10	164	18.186	18.192 (1.000)		979259	40.0000		
* 83 Phenanthrene-d10	188	20.656	20.662 (1.000)		1689126	40.0000		
\$ 78 Terphenyl-d14 (SUR)	244	23.277	23.267 (0.928)		1523593	48.3176	97	
* 81 Chrysene-d12	240	25.080	25.086 (1.000)		1290501	40.0000		
* 84 Perylene-d12	264	28.655	28.660 (1.000)		1520410	40.0000		

Data File: /chem/BNAHS3.1/626/12-06-99/06dec99.b/t8170.d

Date : 06-DEC-1999 17:46

Client ID: BN

Sample Info: WB326;1000;2;1;;

Purge Volume: 1000.0

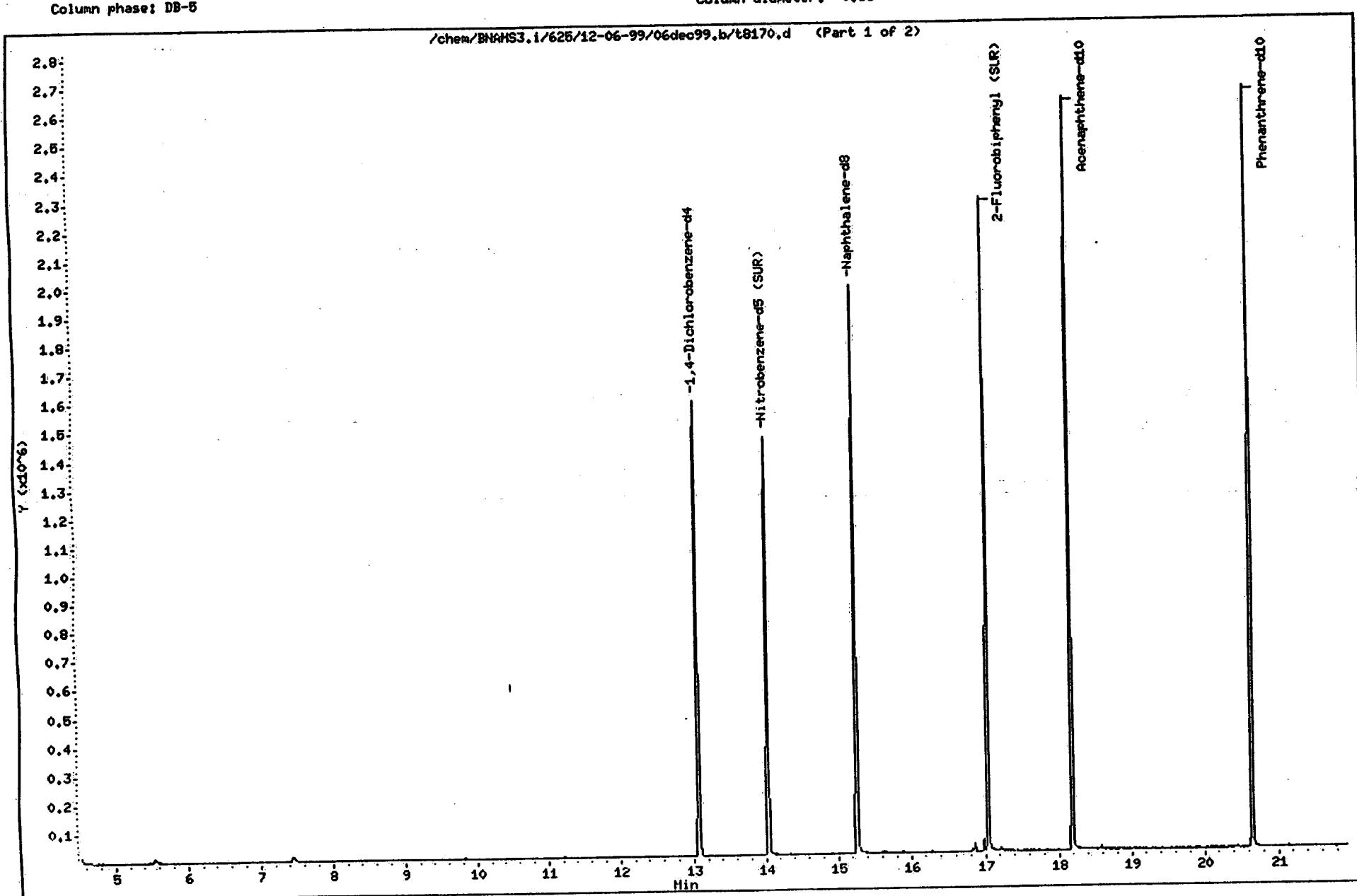
Column phase: DB-5

Instrument: BNAHS3.1

Operator: BNAHS 1

Column diameter: 0.53

/chem/BNAHS3.1/626/12-06-99/06dec99.b/t8170.d (Part 1 of 2)



Data File: /chem/BNAHS3.i/625/12-06-99/06dec99.b/t8170.d

Date : 06-DEC-1999 17:46

Client ID: BN

Sample Info: WB326;1000;2;1;;

Purge Volume: 1000.0

Column phase: DB-5

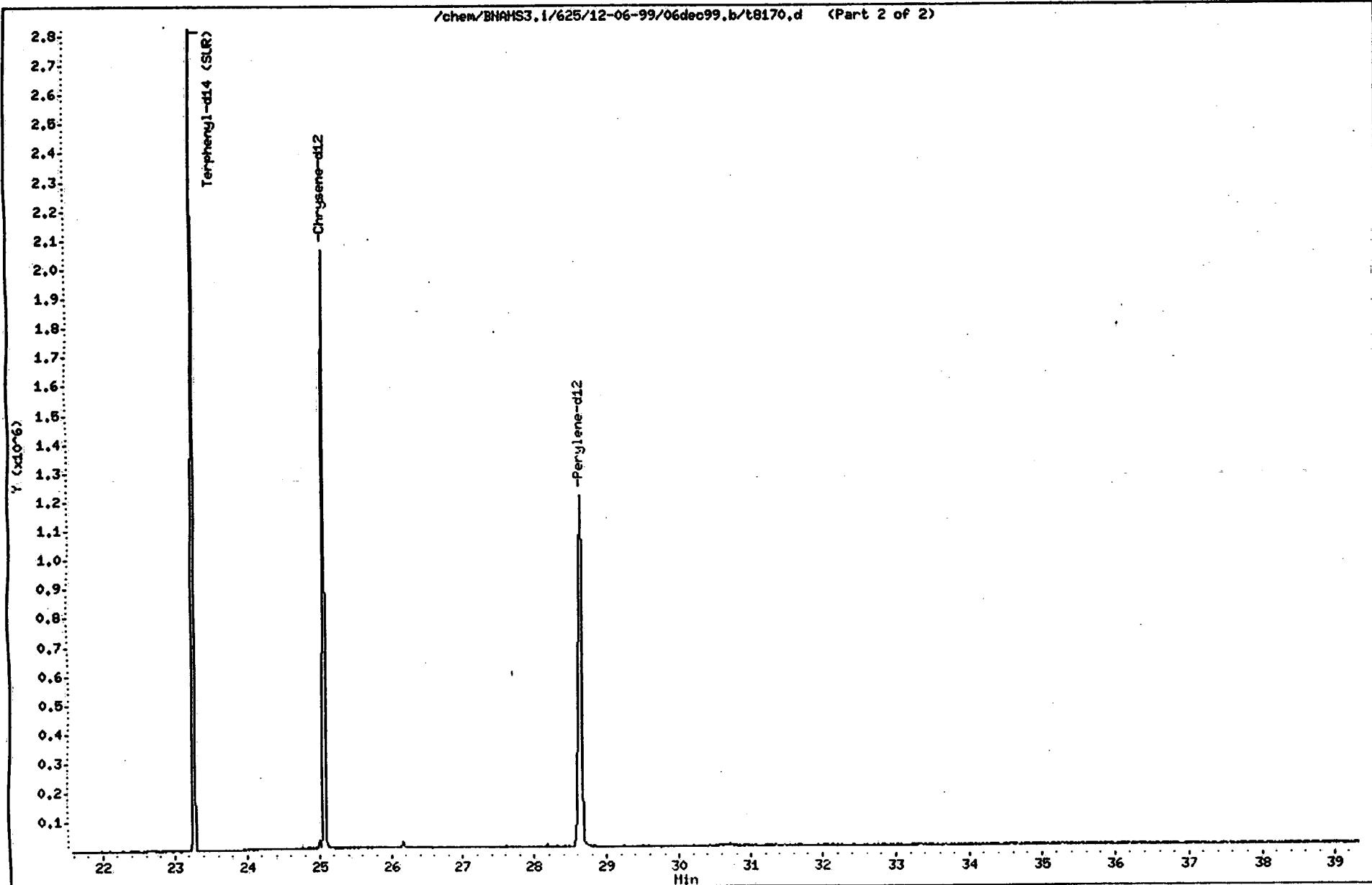
Instrument: BNAHS3.i

Operator: BNAHS 1

Column diameter: 0.53

63

/chem/BNAHS3.i/625/12-06-99/06dec99.b/t8170.d (Part 2 of 2)



SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 11/23/99 11/23/99

Calibration Time(s): 1039 1347

LAB FILE ID:	RRF10: T7897 RRF80: T7895	RRF20: T7896 RRF120: T7894	RRF50: T7893		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Phenol	2.892	2.844	2.551	2.367	2.192
2-Chlorophenol	1.936	2.024	2.014	1.940	1.893
2-Methylphenol	2.335	2.364	2.267	2.147	2.012
4-Methylphenol	2.284	2.314	2.135	1.938	1.719
2-Nitrophenol	0.227	0.229	0.226	0.224	0.213
2,4-Dimethylphenol	0.447	0.449	0.434	0.423	0.401
2,4-Dichlorophenol	0.294	0.302	0.294	0.285	0.271
4-Chloro-3-methylphenol	0.515	0.532	0.508	0.498	0.452
2,4,6-Trichlorophenol	0.407	0.423	0.442	0.426	0.429
2,4,5-Trichlorophenol	0.418	0.444	0.447	0.450	0.451
2,4-Dinitrophenol	0.188	0.250	0.281	0.291	0.301
4-Nitrophenol	0.359	0.376	0.382	0.374	0.374
4,6-Dinitro-2-methylphenol	0.142	0.162	0.167	0.167	0.167
Pentachlorophenol	0.095	0.106	0.111	0.110	0.110
Benzoic Acid	0.214	0.261	0.260	0.270	0.326
N-Nitrosodimethylamine	1.318	1.409	1.490	1.464	1.385
bis(2-Chloroethyl)ether	2.128	2.140	2.046	1.950	1.843
1,3-Dichlorobenzene	1.627	1.622	1.580	1.509	1.464
1,4-Dichlorobenzene	1.532	1.540	1.513	1.436	1.386
1,2-Dichlorobenzene	1.486	1.505	1.442	1.356	1.260
bis(2-chloroisopropyl)ether	4.353	4.060	3.580	3.104	2.607
N-Nitroso-di-n-propylamine	1.546	1.457	1.307	1.148	1.100
Hexachloroethane	0.928	0.979	0.988	0.922	0.898
Nitrobenzene	0.606	0.591	0.539	0.515	0.479
Isophorone	0.994	0.968	0.945	0.928	0.892
bis(2-Chloroethoxy)methane	0.596	0.590	0.552	0.529	0.484
1,2,4-Trichlorobenzene	0.371	0.383	0.365	0.354	0.339
Naphthalene	1.172	1.180	1.135	1.108	1.003
4-Chloroaniline	0.524	0.542	0.530	0.515	0.493
Hexachlorobutadiene	0.122	0.125	0.124	0.128	0.126
2-Methylnaphthalene	0.707	0.703	0.658	0.640	0.583
Hexachlorocyclopentadiene	0.131	0.169	0.216	0.209	0.220
2-Chloronaphthalene	1.177	1.124	1.046	1.054	0.997
2-Nitroaniline	0.550	0.565	0.534	0.510	0.497
Dimethylphthalate	1.520	1.538	1.469	1.412	1.384
Acenaphthylene	1.806	1.796	1.686	1.588	1.473
2,6-Dinitrotoluene	0.383	0.377	0.388	0.374	0.369
3-Nitroaniline	0.397	0.408	0.410	0.398	0.391
Acenaphthene	1.020	1.049	0.984	0.918	0.899

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 11/23/99 11/23/99

Calibration Time(s): 1039 : 1347

LAB FILE ID:	RRF10: T7897 RRF80: T7895	RRF20: T7896 RRF120: T7894	RRF50: T7893		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Dibenzofuran	1.663	1.654	1.591	1.464	1.382
2,4-Dinitrotoluene	0.510	0.514	0.521	0.503	0.486
Diethylphthalate	1.481	1.456	1.415	1.320	1.266
4-Chlorophenyl-phenylether	0.669	0.677	0.664	0.632	0.632
Fluorene	1.381	1.413	1.257	1.173	1.108
4-Nitroaniline	0.402	0.411	0.398	0.386	0.379
N-Nitrosodiphenylamine	0.501	0.479	0.459	0.435	0.423
4-Bromophenyl-phenylether	0.141	0.144	0.141	0.136	0.131
Hexachlorobenzene	0.202	0.192	0.191	0.190	0.181
Phenanthrene	1.032	1.014	0.971	0.920	0.886
Anthracene	1.094	1.053	1.008	0.945	0.896
Carbazole	0.935	0.896	0.804	0.753	0.721
Di-n-butylphthalate	1.255	1.212	1.116	1.027	0.945
Fluoranthene	1.057	1.024	1.021	0.951	0.914
Pyrene	1.819	1.784	1.736	1.733	1.651
Benzidine	0.416	0.460	0.355	0.283	0.188
Butylbenzylphthalate	1.022	1.008	0.951	0.923	0.844
3,3'-Dichlorobenzidine	0.500	0.481	0.432	0.397	0.312
Benzo(a)anthracene	1.161	1.112	1.150	1.122	1.086
Chrysene	1.039	1.057	1.045	1.052	1.001
bis(2-Ethylhexyl)phthalate	1.331	1.280	1.157	1.088	1.014
Di-n-octylphthalate	2.173	2.182	2.099	1.978	1.813
Benzo(b)fluoranthene	1.121	1.149	1.147	1.237	1.286
Benzo(k)fluoranthene	1.151	1.128	1.115	1.058	0.968
Benzo(a)pyrene	1.070	1.103	1.076	1.082	1.066
Indeno(1,2,3-cd)pyrene	1.193	1.169	1.223	1.261	1.283
Dibenz(a,h)anthracene	1.188	1.170	1.170	1.192	1.227
Benzo(g,h,i)perylene	1.147	1.130	1.219	1.173	1.158
Pyridine	1.944	1.928	1.940	1.857	2.028
Aniline	3.117	3.043	2.818	2.539	2.327
Benzyl Alcohol	1.643	1.751	1.718	1.683	1.519
1,2-Diphenylhydrazine	0.874	0.810	0.734	0.658	0.587
Diphenyl	1.417	1.395	1.370	1.244	1.163
Diphenyl Ether	0.866	0.866	0.829	0.791	0.746
Acetophenone	3.342	3.308	3.056	2.814	2.633
N,N-Dimethylaniline	2.996	2.884	2.718	2.541	2.378
1,4-Dioxane	0.767	0.888	0.898	0.887	0.836
2,3,7,8-TCDD (screen)			0.308		
Benzaldehyde	1.488	1.148	0.598	0.708	0.466

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 11/23/99 11/23/99

Calibration Time(s): 1039 1347

LAB FILE ID:	RRF10: T7897 RRF80: T7895	RRF20: T7896 RRF120: T7894	RRF50: T7893		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Caprolactum	0.241	0.247	0.244	0.252	0.245
Atrazine	0.190	0.188	0.182	0.173	0.172
2-Fluorophenol (SUR)	2.456	2.585	2.702	2.612	2.550
Phenol-d5 (SUR)	3.334	3.369	3.217	2.982	2.708
2,4,6-Tribromophenol (SUR)	0.247	0.257	0.278	0.280	0.278
Nitrobenzene-d5 (SUR)	0.473	0.478	0.449	0.448	0.423
2-Fluorobiphenyl (SUR)	1.407	1.372	1.308	1.220	1.150
Terphenyl-d14 (SUR)	1.016	1.026	0.989	0.975	0.894

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 11/23/99 11/23/99

Calibration Time(s): 1039 : 1347

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Phenol	AVRG	2.56924997	11.7*
2-Chlorophenol	AVRG	1.96152747	2.8*
2-Methylphenol	AVRG	2.22512445	6.5*
4-Methylphenol	AVRG	2.07797801	12.0*
2-Nitrophenol	AVRG	0.22399348	2.8*
2,4-Dimethylphenol	AVRG	0.43089417	4.6*
2,4-Dichlorophenol	AVRG	0.28906052	4.1*
4-Chloro-3-methylphenol	AVRG	0.50094265	6.0*
2,4,6-Trichlorophenol	AVRG	0.42536027	2.9*
2,4,5-Trichlorophenol	AVRG	0.44214041	3.1*
2,4-Dinitrophenol	AVRG	0.26237827	17.5**
4-Nitrophenol	AVRG	0.37295916	2.3**
4,6-Dinitro-2-methylphenol	AVRG	0.16101190	6.6*
Pentachlorophenol	AVRG	0.10646566	6.1*
Benzoic Acid	AVRG	0.26621287	15.0*
N-Nitrosodimethylamine	AVRG	1.41306725	4.8*
bis(2-Chloroethyl)ether	AVRG	2.02152320	6.2*
1,3-Dichlorobenzene	AVRG	1.56051617	4.6*
1,4-Dichlorobenzene	AVRG	1.48193801	4.5*
1,2-Dichlorobenzene	AVRG	1.40991419	7.2*
bis(2-chloroisopropyl)ether	AVRG	3.54091930	19.9*
N-Nitroso-di-n-propylamine	AVRG	1.31155449	14.6**
Hexachloroethane	AVRG	0.94277388	4.1*
Nitrobenzene	AVRG	0.54595331	9.7*
Isophorone	AVRG	0.94525852	4.1*
bis(2-Chloroethoxy)methane	AVRG	0.55025268	8.4*
1,2,4-Trichlorobenzene	AVRG	0.36230320	4.6*
Naphthalene	AVRG	1.11947488	6.4*
4-Chloroaniline	AVRG	0.52072627	3.5*
Hexachlorobutadiene	AVRG	0.12495485	1.9*
2-Methylnaphthalene	AVRG	0.65830799	7.8*
Hexachlorocyclopentadiene	AVRG	0.18930155	20.2**
2-Chloronaphthalene	AVRG	1.07981643	6.6*
2-Nitroaniline	AVRG	0.53142127	5.2*
Dimethylphthalate	AVRG	1.46439636	4.6*
Acenaphthylene	AVRG	1.66985065	8.5*
2,6-Dinitrotoluene	AVRG	0.37833150	2.0*
3-Nitroaniline	AVRG	0.40101038	2.0*
Acenaphthene	AVRG	0.97389728	6.6*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 11/23/99 11/23/99

Calibration Time(s): 1039 1347

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Dibenzofuran	AVRG	1.55073414	7.9*
2, 4-Dinitrotoluene	AVRG	0.50685355	2.6*
Diethylphthalate	AVRG	1.38787383	6.6*
4-Chlorophenyl-phenylether	AVRG	0.65495425	3.2*
Fluorene	AVRG	1.26620552	10.3*
4-Nitroaniline	AVRG	0.39519479	3.3*
N-Nitrosodiphenylamine	AVRG	0.45945398	6.9*
4-Bromophenyl-phenylether	AVRG	0.13873332	3.8*
Hexachlorobenzene	AVRG	0.19114752	4.0*
Phenanthrene	AVRG	0.96465020	6.4*
Anthracene	AVRG	0.99903776	8.0*
Carbazole	AVRG	0.82196936	11.1*
Di-n-butylphthalate	AVRG	1.11115751	11.5*
Fluoranthene	AVRG	0.99336967	5.9*
Pyrene	AVRG	1.74492140	3.6*
Benzidine	AVRG	0.34061378	31.7*
Butylbenzylphthalate	AVRG	0.94958802	7.6*
3,3'-Dichlorobenzidine	AVRG	0.42466853	17.6*
Benzo(a)anthracene	AVRG	1.12617528	2.7*
Chrysene	AVRG	1.03883685	2.1*
bis(2-Ethylhexyl)phthalate	AVRG	1.17386132	11.2*
Di-n-octylphthalate	AVRG	2.04912996	7.6*
Benzo(b)fluoranthene	AVRG	1.18796198	5.9*
Benzo(k)fluoranthene	AVRG	1.08405982	6.7*
Benzo(a)pyrene	AVRG	1.07955427	1.3*
Indeno(1,2,3-cd)pyrene	AVRG	1.22587117	3.8*
Dibenz(a,h)anthracene	AVRG	1.18948813	1.9*
Benzo(g,h,i)perylene	AVRG	1.16533865	2.9*
Pyridine	AVRG	1.93949850	3.1*
Aniline	AVRG	2.76879573	12.1*
Benzyl Alcohol	AVRG	1.66289024	5.4*
1,2-Diphenylhydrazine	AVRG	0.73283398	15.7**
Diphenyl	AVRG	1.31786228	8.3**
Diphenyl Ether	AVRG	0.81984009	6.3**
Acetophenone	AVRG	3.03045263	10.2**
N,N-Dimethylaniline	AVRG	2.70327728	9.2**
1,4-Dioxane	AVRG	0.85534852	6.4**
2,3,7,8-TCDD (screen)	AVRG	0.30799178	0.0*
Benzaldehyde	AVRG	0.88185586	48.2*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 11/23/99 11/23/99

Calibration Time(s): 1039 : 1347

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Caprolactum	AVRG	0.24601932	1.7*
Atrazine	AVRG	0.18112880	4.5*
2-Fluorophenol (SUR)	AVRG	2.58105013	3.5*
Phenol-d5 (SUR)	AVRG	3.12191406	8.9*
2,4,6-Tribromophenol (SUR)	AVRG	0.26821627	5.6*
Nitrobenzene-d5 (SUR)	AVRG	0.45443304	4.9*
2-Fluorobiphenyl (SUR)	AVRG	1.29129355	8.2*
Terphenyl-d14 (SUR)	AVRG	0.97998231	5.3*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS CONTINUING CALIBRATION CHECK
METHOD 625

Instrument ID: BNAMS3

Calibration Date: 12/02/99 Time: 1258

Lab File ID: T8099

Init. Calib. Date(s): 11/23/99 11/23/99

Init. Calib. Times: 1039 1347

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	2.569	2.697		-4.8	20.0
2-Chlorophenol	1.961	1.773		9.6	20.0
2-Methylphenol	2.225	2.288		-2.8	
4-Methylphenol	2.078	2.167		-4.1	
2-Nitrophenol	0.224	0.231		-3.1	20.0
2,4-Dimethylphenol	0.431	0.416		3.5	20.0
2,4-Dichlorophenol	0.289	0.342		-18.3	20.0
4-Chloro-3-methylphenol	0.501	0.582		-16.0	20.0
2,4,6-Trichlorophenol	0.425	0.387		8.9	20.0
2,4,5-Trichlorophenol	0.442	0.402		9.0	
2,4-Dinitrophenol	0.262	0.245	0.05	6.5	20.0
4-Nitrophenol	0.373	0.338	0.05	9.4	20.0
4,6-Dinitro-2-methylphenol	0.161	0.148		8.1	20.0
Pentachlorophenol	0.106	0.120		-13.2	20.0
Benzoic Acid	0.266	0.288		-8.1	
N-Nitrosodimethylamine	1.413	1.396		1.2	20.0
bis(2-Chloroethyl)ether	2.021	2.174		-7.4	20.0
1,3-Dichlorobenzene	1.560	1.533		1.7	20.0
1,4-Dichlorobenzene	1.481	1.482		-0.0	20.0
1,2-Dichlorobenzene	1.410	1.388		1.6	20.0
bis(2-chloroisopropyl)ether	3.541	3.462		2.2	20.0
N-Nitroso-di-n-propylamine	1.312	1.182	0.5	9.9	20.0
Hexachloroethane	0.943	0.883		6.4	20.0
Nitrobenzene	0.546	0.558		-2.0	20.0
Isophorone	0.945	1.040		-10.0	20.0
bis(2-Chloroethoxy)methane	0.550	0.646		-17.4	20.0
1,2,4-Trichlorobenzene	0.362	0.409		-12.8	20.0
Naphthalene	1.120	1.069		4.6	20.0
4-Chloroaniline	0.521	0.494		5.2	
Hexachlorobutadiene	0.125	0.134		-7.2	20.0
2-Methylnaphthalene	0.658	0.685		-4.1	
Hexachlorocyclopentadiene	0.189	0.171	0.05	9.5	20.0
2-Chloronaphthalene	1.080	1.036		4.1	20.0
2-Nitroaniline	0.531	0.456		14.1	
Dimethylphthalate	1.465	1.464		0.1	20.0
Acenaphthylene	1.670	1.580		5.4	20.0
2,6-Dinitrotoluene	0.378	0.383		-1.3	20.0

SEMIVOLATILE ORGANICS CONTINUING CALIBRATION CHECK(cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date: 12/02/99 Time: 1258

Lab File ID: T8099

Init. Calib. Date(s): 11/23/99 11/23/99

Init. Calib. Times: 1039 1347

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
3-Nitroaniline	0.401	0.346		13.7	
Acenaphthene	0.974	0.939		3.6	20.0
Dibenzofuran	1.551	1.587		-2.3	
2,4-Dinitrotoluene	0.507	0.514		-1.2	20.0
Diethylphthalate	1.388	1.325		4.5	20.0
4-Chlorophenyl-phenylether	0.655	0.551		15.9	20.0
Fluorene	1.266	1.192		5.8	20.0
4-Nitroaniline	0.395	0.329		16.7	
N-Nitrosodiphenylamine	0.459	0.484		-5.4	20.0
4-Bromophenyl-phenylether	0.139	0.144		-3.4	20.0
Hexachlorobenzene	0.191	0.213		-11.5	20.0
Phenanthrene	0.965	1.019		-5.4	20.0
Anthracene	0.999	1.015		-1.6	20.0
Carbazole	0.822	0.866		-5.2	
Di-n-butylphthalate	1.111	1.143		-2.7	20.0
Fluoranthene	0.993	0.951		4.2	20.0
Pyrene	1.745	1.575		9.7	20.0
Benzidine	0.340	0.220		35.3	
Butylbenzylphthalate	0.950	0.964		-1.3	20.0
3,3'-Dichlorobenzidine	0.424	0.458		-8.0	20.0
Benzo(a)anthracene	1.126	1.106		1.8	20.0
Chrysene	1.039	1.030		0.9	20.0
bis(2-Ethylhexyl)phthalate	1.174	1.111		5.4	20.0
Di-n-octylphthalate	2.049	1.975		3.6	20.0
Benzo(b)fluoranthene	1.188	1.175		1.1	20.0
Benzo(k)fluoranthene	1.084	1.111		-2.3	20.0
Benzo(a)pyrene	1.079	1.085		-0.0	20.0
Indeno(1,2,3-cd)pyrene	1.226	1.310		-6.8	20.0
Dibenz(a,h)anthracene	1.189	1.229		-3.2	20.0
Benzo(g,h,i)perylene	1.165	1.267		-8.6	20.0
Pyridine	1.939	2.028		-4.4	
Aniline	2.769	2.706		2.3	
Benzyl Alcohol	1.663	1.777		-6.8	
1,2-Diphenylhydrazine	0.733	0.716		2.3	
Diphenyl	1.318	1.217	0.001	7.7	20.0
Diphenyl Ether	0.820	0.798	0.001	2.7	20.0
Acetophenone	3.031	3.296	0.001	-8.7	20.0

SEMICVOLATILE ORGANICS CONTINUING CALIBRATION CHECK (cont'd)
METHOD 625

Instrument ID: BNAMS3 Calibration Date: 12/02/99 Time: 1258
 Lab File ID: T8099 Init. Calib. Date(s): 11/23/99 11/23/99
 Init. Calib. Times: 1039 1347

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
N,N-Dimethylaniline	2.703	2.287	0.001	15.4	20.0
1,4-Dioxane	0.855	0.904	0.001	-5.7	20.0
2,3,7,8-TCDD (screen)	0.308	0.294		4.5	20.0
Benzaldehyde	0.882	1.000		-13.2	20.0
Caprolactum	0.246	0.261		-5.9	20.0
Atrazine	0.181	0.146		19.3	20.0
2-Fluorophenol (SUR)	2.581	2.535		1.8	
Phenol-d5 (SUR)	3.122	3.453		-10.6	
2,4,6-Tribromophenol (SUR)	0.268	0.268		0.0	20.0
Nitrobenzene-d5 (SUR)	0.454	0.482		-6.0	
2-Fluorobiphenyl (SUR)	1.291	1.255		2.8	
Terphenyl-d14 (SUR)	0.980	0.983		-0.0	

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 12/06/99 12/06/99

Calibration Time(s): 1208 1524

LAB FILE ID:	RRF10: T8167 RRF80: T8165	RRF20: T8166 RRF120: T8164	RRF50: T8163		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Phenol	2.123	2.141	1.949	1.852	1.791
2-Chlorophenol	1.573	1.555	1.463	1.447	1.373
2-Methylphenol	1.954	1.948	1.818	1.796	1.724
4-Methylphenol	2.072	2.034	1.753	1.635	1.475
2-Nitrophenol	0.219	0.232	0.229	0.222	0.206
2,4-Dimethylphenol	0.423	0.418	0.381	0.369	0.337
2,4-Dichlorophenol	0.383	0.393	0.376	0.359	0.332
4-Chloro-3-methylphenol	0.529	0.537	0.500	0.490	0.412
2,4,6-Trichlorophenol	0.330	0.332	0.312	0.312	0.292
2,4,5-Trichlorophenol	0.353	0.357	0.326	0.330	0.311
2,4-Dinitrophenol	0.152	0.196	0.193	0.212	0.206
4-Nitrophenol	0.265	0.262	0.253	0.256	0.253
4,6-Dinitro-2-methylphenol	0.113	0.127	0.123	0.122	0.119
Pentachlorophenol	0.166	0.165	0.167	0.158	0.155
Benzoic Acid	0.256	0.302	0.222	0.228	0.204
N-Nitrosodimethylamine	0.942	1.017	1.085	1.020	1.013
bis(2-Chloroethyl)ether	1.744	1.695	1.544	1.438	1.388
1,3-Dichlorobenzene	1.569	1.513	1.482	1.398	1.296
1,4-Dichlorobenzene	1.549	1.455	1.374	1.283	1.245
1,2-Dichlorobenzene	1.482	1.428	1.345	1.247	1.178
bis(2-chloroisopropyl)ether	2.215	2.053	1.875	1.711	1.556
N-Nitroso-di-n-propylamine	1.054	1.018	0.862	0.859	0.837
Hexachloroethane	0.786	0.800	0.746	0.727	0.685
Nitrobenzene	0.524	0.514	0.454	0.435	0.409
Isophorone	0.846	0.865	0.830	0.805	0.779
bis(2-Chloroethoxy)methane	0.553	0.540	0.483	0.454	0.418
1,2,4-Trichlorobenzene	0.453	0.458	0.420	0.408	0.376
Naphthalene	1.150	1.146	1.036	0.961	0.889
4-Chloroaniline	0.520	0.515	0.484	0.469	0.424
Hexachlorobutadiene	0.143	0.146	0.143	0.138	0.131
2-Methylnaphthalene	0.770	0.766	0.679	0.640	0.608
Hexachlorocyclopentadiene	0.188	0.206	0.227	0.221	0.219
2-Chloronaphthalene	1.194	1.151	1.049	0.979	0.920
2-Nitroaniline	0.411	0.370	0.325	0.322	0.294
Dimethylphthalate	1.582	1.542	1.447	1.391	1.293
Acenaphthylene	1.766	1.686	1.537	1.443	1.316
2,6-Dinitrotoluene	0.364	0.384	0.370	0.370	0.346
3-Nitroaniline	0.330	0.329	0.321	0.316	0.300
Acenaphthene	1.028	0.984	0.889	0.861	0.813

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 12/06/99 12/06/99

Calibration Time(s): 1208 1524

LAB FILE ID:	RRF10: T8167 RRF80: T8165		RRF20: T8166 RRF120: T8164		RRF50: T8163
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Dibenzofuran	1.836	1.784	1.606	1.500	1.393
2,4-Dinitrotoluene	0.489	0.512	0.504	0.489	0.463
Diethylphthalate	1.337	1.322	1.224	1.149	1.067
4-Chlorophenyl-phenylether	0.498	0.477	0.435	0.422	0.402
Fluorene	1.460	1.369	1.241	1.140	1.064
4-Nitroaniline	0.333	0.324	0.300	0.288	0.277
N-Nitrosodiphenylamine	0.641	0.614	0.585	0.514	0.498
4-Bromophenyl-phenylether	0.196	0.196	0.191	0.176	0.166
Hexachlorobenzene	0.247	0.247	0.226	0.213	0.203
Phenanthrene	1.246	1.229	1.113	1.048	0.988
Anthracene	1.297	1.263	1.143	1.068	1.011
Carbazole	1.214	1.105	1.040	0.899	0.843
Di-n-butylphthalate	1.414	1.408	1.256	1.142	1.099
Fluoranthene	1.014	0.994	0.901	0.861	0.818
Pyrene	1.308	1.296	1.191	1.181	1.135
Benzidine	0.569	0.584	0.426	0.364	0.252
Butylbenzylphthalate	0.887	0.898	0.803	0.820	0.764
3,3'-Dichlorobenzidine	0.537	0.519	0.475	0.419	0.346
Benzo(a)anthracene	1.109	1.085	1.035	1.026	1.007
Chrysene	0.992	1.024	0.970	0.950	0.914
bis(2-Ethylhexyl)phthalate	1.177	1.113	0.986	0.986	0.940
Di-n-octylphthalate	1.733	1.741	1.620	1.537	1.467
Benzo(b)fluoranthene	1.144	1.159	1.144	1.126	1.169
Benzo(k)fluoranthene	1.125	1.108	1.062	1.024	0.872
Benzo(a)pyrene	1.088	1.088	1.080	1.050	1.021
Indeno(1,2,3-cd)pyrene	1.079	1.109	1.114	1.168	1.149
Dibenz(a,h)anthracene	1.077	1.051	1.032	1.055	1.065
Benzo(g,h,i)perylene	1.140	1.161	1.175	1.161	1.142
Pyridine	1.462	1.579	1.573	1.597	1.494
Aniline	2.391	2.326	2.116	2.036	1.893
Benzyl Alcohol	1.394	1.403	1.334	1.303	1.266
1,2-Diphenylhydrazine	0.743	0.717	0.661	0.577	0.536
Diphenyl	1.373	1.362	1.228	1.136	1.065
Diphenyl Ether	0.910	0.881	0.818	0.777	0.724
Acetophenone	2.726	2.558	2.140	2.058	1.947
N,N-Dimethylaniline	2.543	2.376	1.969	1.876	1.724
1,4-Dioxane	0.603	0.638	0.687	0.663	0.655
2,3,7,8-TCDD (screen)			0.225		
Benzaldehyde	1.128	1.100	0.694	0.692	0.505

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 12/06/99 12/06/99

Calibration Time(s): 1208 1524

LAB FILE ID:	RRF10: T8167 RRF80: T8165	RRF20: T8166 RRF120: T8164	RRF50: T8163		
COMPOUND	RRF10	RRF20	RRF50	RRF80	RRF120
Caprolactum _____	0.236	0.253	0.238	0.231	0.187
Atrazine _____	0.180	0.168	0.150	0.146	0.139
2-Fluorophenol (SUR) _____	2.101	2.121	2.168	2.143	2.104
Phenol-d5 (SUR) _____	2.691	2.629	2.574	2.445	2.351
2,4,6-Tribromophenol (SUR) _____	0.171	0.174	0.171	0.172	0.161
Nitrobenzene-d5 (SUR) _____	0.396	0.410	0.391	0.376	0.362
2-Fluorobiphenyl (SUR) _____	1.475	1.411	1.273	1.209	1.094
Terphenyl-d14 (SUR) _____	1.046	1.048	0.967	0.943	0.882

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 12/06/99 12/06/99
Calibration Time(s): 1208 1524

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Phenol	AVRG	1.97125174	8.0*
2-Chlorophenol	AVRG	1.48217243	5.5*
2-Methylphenol	AVRG	1.84832004	5.4*
4-Methylphenol	AVRG	1.79393774	14.3*
2-Nitrophenol	AVRG	0.22145299	4.6*
2,4-Dimethylphenol	AVRG	0.38566869	9.2*
2,4-Dichlorophenol	AVRG	0.36839616	6.5*
4-Chloro-3-methylphenol	AVRG	0.49371127	10.1*
2,4,6-Trichlorophenol	AVRG	0.31562484	5.2*
2,4,5-Trichlorophenol	AVRG	0.33559675	5.8*
2,4-Dinitrophenol	AVRG	0.19190698	12.2**
4-Nitrophenol	AVRG	0.25788870	2.0**
4,6-Dinitro-2-methylphenol	AVRG	0.12097894	4.4*
Pentachlorophenol	AVRG	0.16245455	3.4*
Benzoic Acid	AVRG	0.24261486	15.8*
N-Nitrosodimethylamine	AVRG	1.01529656	5.0*
bis(2-Chloroethyl)ether	AVRG	1.56184714	9.9*
1,3-Dichlorobenzene	AVRG	1.45166447	7.4*
1,4-Dichlorobenzene	AVRG	1.38128580	9.0*
1,2-Dichlorobenzene	AVRG	1.33629608	9.4*
bis(2-chloroisopropyl)ether	AVRG	1.88213440	14.0*
N-Nitroso-di-n-propylamine	AVRG	0.92633437	11.0**
Hexachloroethane	AVRG	0.74904773	6.2*
Nitrobenzene	AVRG	0.46716084	10.8*
Isophorone	AVRG	0.82519882	4.1*
bis(2-Chloroethoxy)methane	AVRG	0.48961701	11.7*
1,2,4-Trichlorobenzene	AVRG	0.42314419	7.9*
Naphthalene	AVRG	1.03653500	11.0*
4-Chloroaniline	AVRG	0.48213591	8.1*
Hexachlorobutadiene	AVRG	0.14025480	4.2*
2-Methylnaphthalene	AVRG	0.69254447	10.6*
Hexachlorocyclopentadiene	AVRG	0.21252793	7.3**
2-Chloronaphthalene	AVRG	1.05883843	10.8*
2-Nitroaniline	AVRG	0.34449055	13.4*
Dimethylphthalate	AVRG	1.45101175	8.0*
Acenaphthylene	AVRG	1.54966102	11.7*
2,6-Dinitrotoluene	AVRG	0.36653260	3.8*
3-Nitroaniline	AVRG	0.31937775	3.8*
Acenaphthene	AVRG	0.91513519	9.7*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 12/06/99 12/06/99

Calibration Time(s): 1208 : 1524

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Dibenzofuran	AVRG	1.62389695	11.5*
2,4-Dinitrotoluene	AVRG	0.49145416	3.8*
Diethylphthalate	AVRG	1.21991690	9.4*
4-Chlorophenyl-phenylether	AVRG	0.44701041	8.9*
Fluorene	AVRG	1.25471929	12.9*
4-Nitroaniline	AVRG	0.30449309	7.8*
N-Nitrosodiphenylamine	AVRG	0.57042423	10.9*
4-Bromophenyl-phenylether	AVRG	0.18514418	7.2*
Hexachlorobenzene	AVRG	0.22715853	8.7*
Phenanthrene	AVRG	1.12471766	10.0*
Anthracene	AVRG	1.15636367	10.6*
Carbazole	AVRG	1.02018636	14.8*
Di-n-butylphthalate	AVRG	1.26403229	11.6*
Fluoranthene	AVRG	0.91752910	9.2*
Pyrene	AVRG	1.22227420	6.2*
Benzidine	AVRG	0.43909786	31.9*
Butylbenzylphthalate	AVRG	0.83447474	6.8*
3,3'-Dichlorobenzidine	AVRG	0.45935607	17.0*
Benzo(a)anthracene	AVRG	1.05255781	4.0*
Chrysene	AVRG	0.97005262	4.3*
bis(2-Ethylhexyl)phthalate	AVRG	1.04059159	9.6*
Di-n-octylphthalate	AVRG	1.61958370	7.4*
Benzo(b)fluoranthene	AVRG	1.14848821	1.4*
Benzo(k)fluoranthene	AVRG	1.03821757	9.7*
Benzo(a)pyrene	AVRG	1.06530560	2.7*
Indeno(1,2,3-cd)pyrene	AVRG	1.12398082	3.1*
Dibenz(a,h)anthracene	AVRG	1.05607930	1.6*
Benzo(g,h,i)perylene	AVRG	1.15609279	1.3*
Pyridine	AVRG	1.54115711	3.8*
Aniline	AVRG	2.15226884	9.6*
Benzyl Alcohol	AVRG	1.34128696	4.5*
1,2-Diphenylhydrazine	AVRG	0.64689542	13.7*
Diphenyl	AVRG	1.23295517	11.0**
Diphenyl Ether	AVRG	0.82198964	9.2**
Acetophenone	AVRG	2.28583897	14.8**
N,N-Dimethylaniline	AVRG	2.09739181	16.5**
1,4-Dioxane	AVRG	0.64927964	4.8**
2,3,7,8-TCDD (screen)	AVRG	0.22503830	0.0*
Benzaldehyde	AVRG	0.82401553	33.5*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA (cont'd)
METHOD 625

Instrument ID: BNAMS3

Calibration Date(s): 12/06/99 12/06/99

Calibration Time(s): 1208 1524

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
Caprolactum	AVRG	0.22899862	10.8*
Atrazine	AVRG	0.15659110	10.8*
2-Fluorophenol (SUR)	AVRG	2.12749432	1.3*
Phenol-d5 (SUR)	AVRG	2.53800620	5.4*
2,4,6-Tribromophenol (SUR)	AVRG	0.16978885	3.0*
Nitrobenzene-d5 (SUR)	AVRG	0.38711189	4.8*
2-Fluorobiphenyl (SUR)	AVRG	1.29246441	11.8*
Terphenyl-d14 (SUR)	AVRG	0.97737794	7.3*

* Compound with required maximum % RSD value.

** Compound with required minimum RRF value.

SEMI-VOLATILE SURROGATE RECOVERY
METHOD 625

Matrix: WATER

Level: LOW

Lab Job No: V250

LAB SAMPLE NO.	S1 #	S2 #	S3 #	OTHER	TOT OUT
01 169024	80	81	86		0
02 169025	100	78	91		0
03 169026	96	76	95		0
04 169027	98	78	93		0
05 169028	102	84	96		0
06 WB326	90	70	97		0
07					
08					
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29					
30					

QC LIMITS

S1	= Nitrobenzene-d5	(55-115)
S2	= 2-Fluorobiphenyl	(59-109)
S3	= Terphenyl-d14	(73-132)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

SEMI-VOLATILE SPIKE RECOVERY SUMMARY
METHOD 625

Matrix: WATER

Matrix Spike - Lab Sample No.: 170673

Level: LOW

MS Sample from Lab Job No: V487

QA Batch: 5079

Compound	MS % REC.	BS % REC.	LIMITS
bis(2-Chloroethyl)ether	93	95	12-158
1,3-Dichlorobenzene	79	67	0-172
1,4-Dichlorobenzene	78	66	20-124
1,2-Dichlorobenzene	82	67	32-129
bis(2-chloroisopropyl)ether	86	90	36-166
N-Nitroso-di-n-propylamine	91	94	0-230
Hexachloroethane	71	63	40-113
Nitrobenzene	88	90	35-180
Isophorone	80	81	21-196
bis(2-Chloroethoxy)methane	94	100	33-184
1,2,4-Trichlorobenzene	83	69	44-142
Naphthalene	88	79	21-133
Hexachlorobutadiene	72	60	24-116
2-Chloronaphthalene	89	83	60-118
Dimethylphthalate	23	24	0-112
Acenaphthylene	88	88	33-145
2,6-Dinitrotoluene	97	100	50-158
Acenaphthene	91	88	47-145
2,4-Dinitrotoluene	95	100	39-139
Diethylphthalate	61	65	0-114
4-Chlorophenyl-phenylether	93	86	25-158
Fluorene	90	88	59-121
4-Bromophenyl-phenylether	91	85	53-127
Hexachlorobenzene	92	81	0-152
Phenanthren	94	90	54-120
Anthracene	93	90	27-133
Di-n-butylphthalate	84	84	1-118
Fluoranthene	93	86	26-137
Pyrene	98	97	52-115
Butylbenzylphthalate	74	76	0-152

* Values outside of QC limits

SEMI-VOLATILE SPIKE RECOVERY SUMMARY
METHOD 625

Matrix: WATER

Matrix Spike - Lab Sample No.: 170673

Level: LOW

MS Sample from Lab Job No: V487

QA Batch: 5079

Compound	MS % REC.	BS % REC.	LIMITS
3,3'-Dichlorobenzidine	87	95	0-262
Benzo(a)anthracene	95	87	33-143
Chrysene	95	90	17-168
bis(2-Ethylhexyl)phthalate	97	94	8-158
Di-n-octylphthalate	94	89	4-146
Benzo(b)fluoranthene	92	83	24-159
Benzo(k)fluoranthene	96	88	11-162
Benzo(a)pyrene	94	85	17-163
Indeno(1,2,3-cd)pyrene	96	88	0-171
Dibenz(a,h)anthracene	93	86	0-227
Benzo(g,h,i)perylene	94	88	0-219
Diphenyl	90	85	70-130
Acetophenone	86	95	70-130
Benzaldehyde	47	*	70-130
Caprolactum	10	*	70-130
Atrazine	82	79	70-130

* Values outside of QC limits

Spike Recovery: 4 out of 92 outside limits

COMMENTS: _____

SEMOVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): T8099

Date Analyzed: 12/02/99

Instrument ID: BNAMS3

Time Analyzed: 1258

	IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(CRY) AREA #	RT #
12 HOUR STD	384414	12.78	1566454	14.97	1169095	24.75
UPPER LIMIT	768828	13.28	3132908	15.47	2338190	25.25
LOWER LIMIT	192207	12.28	783227	14.47	584548	24.25
LABORATORY SAMPLE NO.						
01 169024	317560	12.78	1311722	14.96	1073913	24.73
02 169025	322947	12.78	1177090	14.96	1087104	24.72
03 169026	305572	12.78	1152707	14.96	1029292	24.72
04 169027	320869	12.78	1193994	14.97	1033683	24.73
05 169028	306208	12.78	1178639	14.96	1099976	24.72
06						
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22						

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (CRY) = Chrysene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMOVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard) : T8099

Date Analyzed: 12/02/99

Instrument ID: BNAMS3

Time Analyzed: 1258

	IS4 (ANT) AREA #	RT #	IS5 (PHN) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	1053612	17.90	2092493	20.36	1379904	28.03
UPPER LIMIT	2107224	18.40	4184986	20.86	2759808	28.53
LOWER LIMIT	526806	17.40	1046246	19.86	689952	27.53
LABORATORY SAMPLE NO.						
01 169024	854431	17.89	1706599	20.35	1242242	28.00
02 169025	927377	17.89	1507316	20.35	1296939	28.01
03 169026	868100	17.89	1413969	20.35	1240509	28.00
04 169027	929083	17.89	1475885	20.35	1310047	28.01
05 169028	922537	17.90	1459877	20.35	1286053	28.01
06						
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IS4 (ANT) = Acenaphthene-d10
 IS5 (PHN) = Phenanthrene-d10
 IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
 * Values outside of QC limits.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): T8163

Date Analyzed: 12/06/99

Instrument ID: BNAMS3

Time Analyzed: 1208

	IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(CRY) AREA #	RT #
12 HOUR STD	464369	13.08	1636055	15.27	1399584	25.10
UPPER LIMIT	928738	13.58	3272110	15.77	2799168	25.60
LOWER LIMIT	232184	12.58	818028	14.77	699792	24.60
LABORATORY SAMPLE NO.						
01 WB326	367316	13.08	1361747	15.26	1290501	25.08
02						
03						
04						
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06						
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21						
22						

IS1 (DCB) = 1,4-Dichlorobenzene-d4

IS2 (NPT) = Naphthalene-d8

IS3 (CRY) = Chrysene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab File ID (Standard): T8163

Date Analyzed: 12/06/99

Instrument ID: BNAMS3

Time Analyzed: 1208

	IS4 (ANT) AREA #	RT #	IS5 (PHN) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	1163584	18.20	1910164	20.67	1748846	28.69
UPPER LIMIT	2327168	18.70	3820328	21.17	3497692	29.19
LOWER LIMIT	581792	17.70	955082	20.17	874423	28.19
LABORATORY SAMPLE NO.						
01 WB326	979259	18.19	1689126	20.66	1520410	28.65
02						
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22						

IS4 (ANT) = Acenaphthene-d10

IS5 (PHN) = Phenanthrene-d10

IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = + 0.50 minutes of internal standard RT

RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.

* Values outside of QC limits.

Client ID: 19-8
Site: L.E. Carpenter

Lab Sample No: 169024
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7251.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

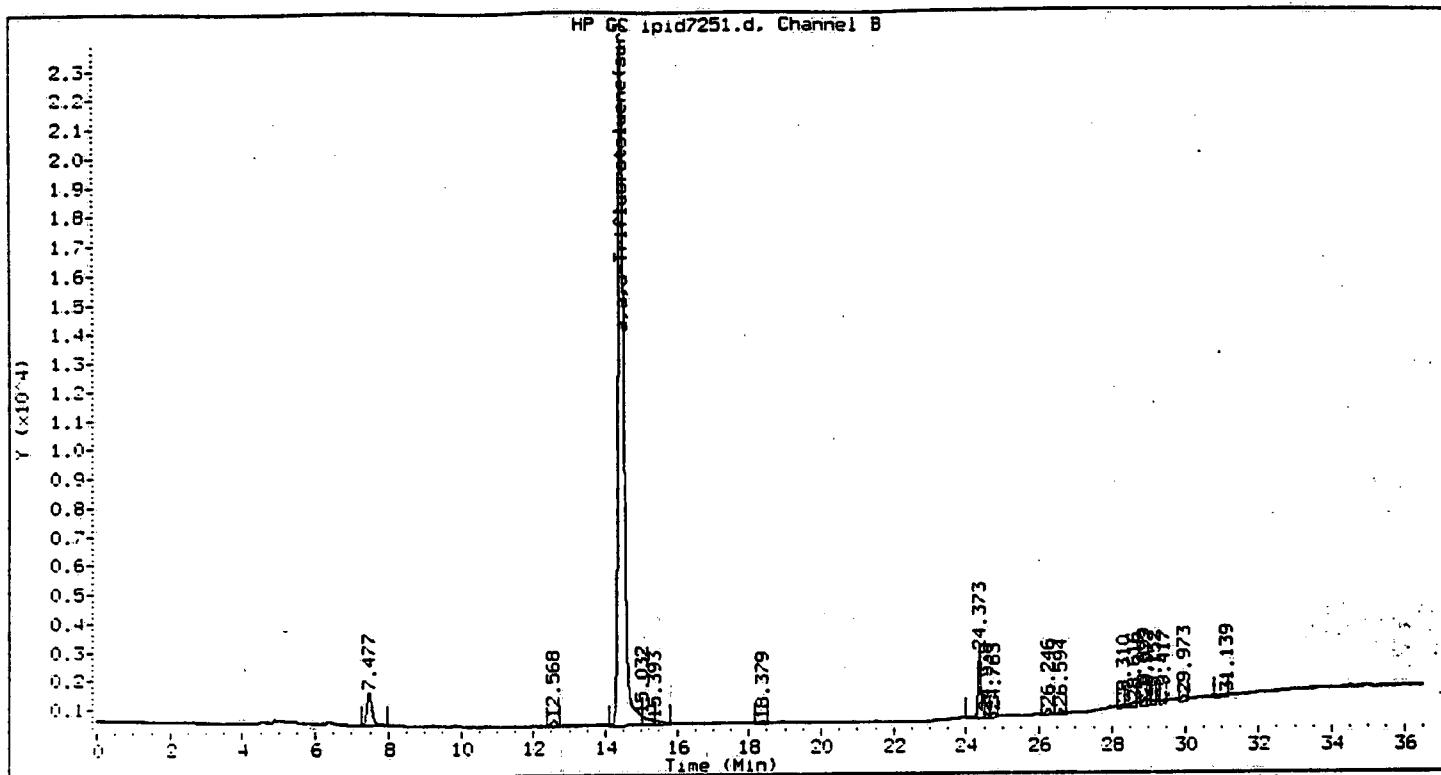
VOLATILE ORGANICS - GC/PID
METHOD 602

Parameter

Analytical Result
Units: ug/l

Method Detection
Limit
Units: ug/l

Benzene	ND	0.31
Toluene	ND	0.34
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : 169024

Lab ID : 169024

Inj Date : 17-NOV-1999 11:18

Operator : SP

Cpnd Sublist: BTEX

Inst ID : VOAGC3.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.450	14.466	0.016	1269503	29.016	29.016

Client ID: 19-7
Site: L.E. Carpenter

Lab Sample No: 169025
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7252.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 50.0

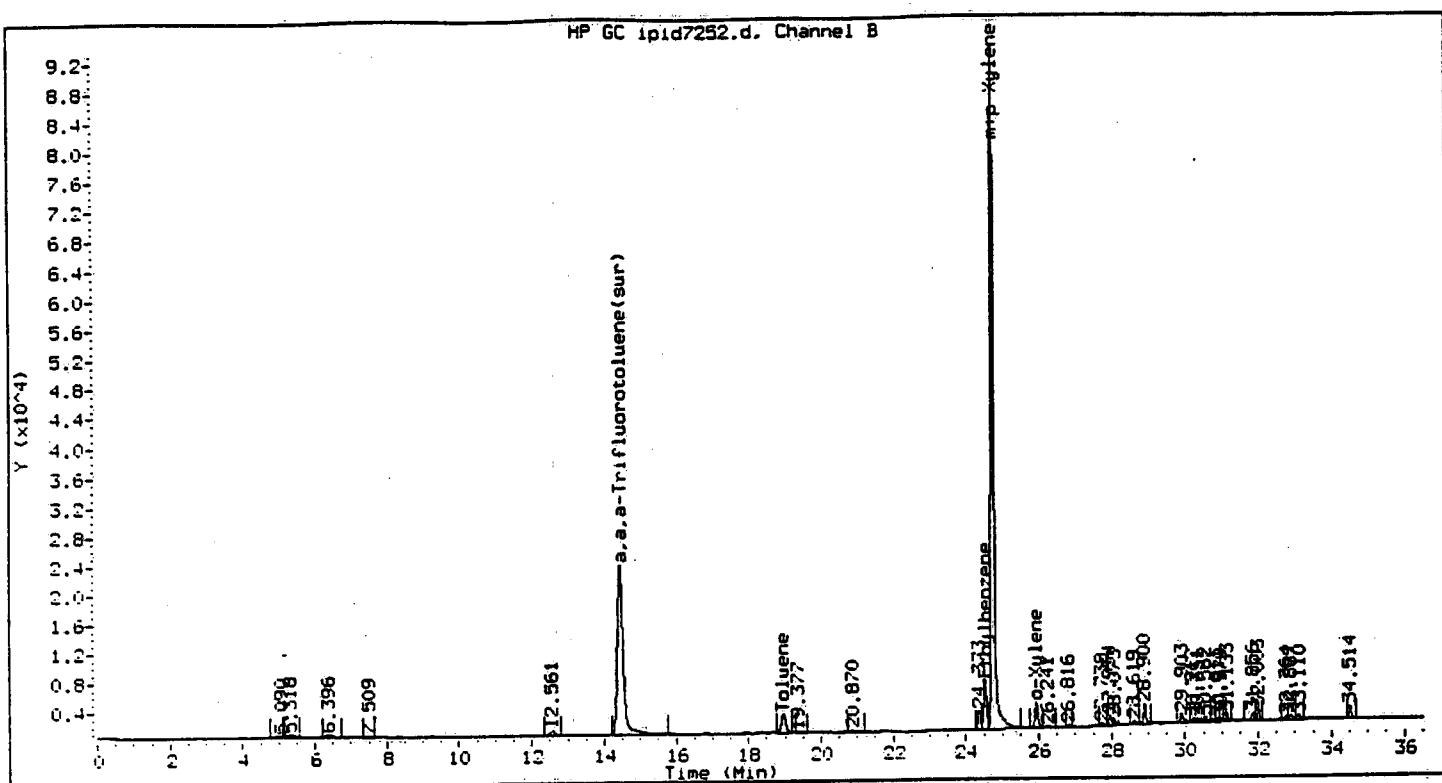
**VOLATILE ORGANICS - GC/PID
METHOD 602**

Parameter

**Analytical Result
Units: ug/l**

**Method Detection
Limit
Units: ug/l**

Benzene	ND	16
Toluene	51	17
Ethylbenzene	100	19
Xylene (Total)	1400	20



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : 169025;;50

Lab ID : 169025

Inj Date : 17-NOV-1999 11:58

Operator : SP

Cpnd Sublist: BTEX

Inst ID : VOAGC3.i

Dil Factor : 50

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/L)
m+p-Xylene	24.761	24.773	0.011	2622522	25.739 1286.965
o-Xylene	25.929	25.939	0.010	96426	1.107 55.329
Toluene	18.955	18.973	0.018	110843	1.025 51.236
Ethylbenzene	24.538	24.551	0.013	180606	2.084 104.181
Xylene (Total)	25.019	25.019	0.000	2718948	28.039 1401.931
a,a,a-Trifluorotoluene (sur)	14.451	14.466	0.015	1282121	29.305 29.305

Client ID: 19-9
Site: L.E. Carpenter

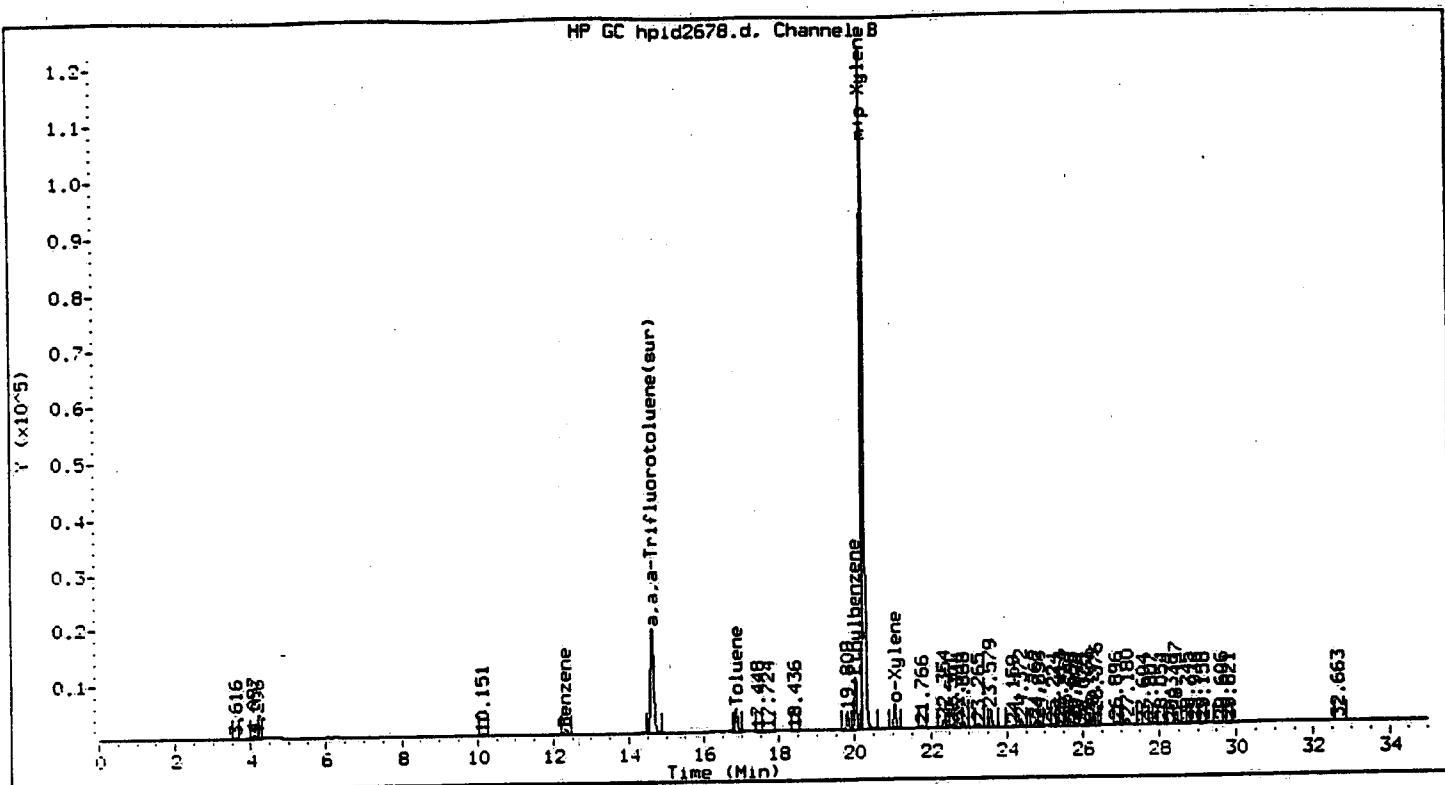
Lab Sample No: 169026
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/22/99
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid2678.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 25.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	13	7.8
Toluene	51	8.5
Ethylbenzene	110	9.5
Xylene (Total)	1300	10



Method : /chem/VOAGC2.i/602/11-19-99/22NOV99.b/602_99.m

Sample Info : 169026;;25

Lab ID : 169026

Inj Date : 22-NOV-1999 10:30

Operator : SP

Cpnd Sublist: btex

Inst ID : VOAGC2.i

Dil Factor : 25

Sample Matrix : WATER

Sample Type: SAMPLE

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
m+p-Xylene	20.259	20.250	0.009	2512047	48.581 1214.527
o-Xylene	21.049	21.038	0.011	89735	1.909 47.727
Benzene	12.323	12.313	0.009	26224	0.506 12.641
Toluene	16.864	16.854	0.010	102482	2.047 51.178
Ethylbenzene	20.027	20.017	0.011	192626	4.264 106.594
Xylene (Total)	25.019	25.019	0.000	2601782	51.890 1297.253
a,a,a-Trifluorotoluene (sur)	14.630	14.621	0.009	559515	29.282 29.282

Client ID: 19-6
Site: L.E. Carpenter

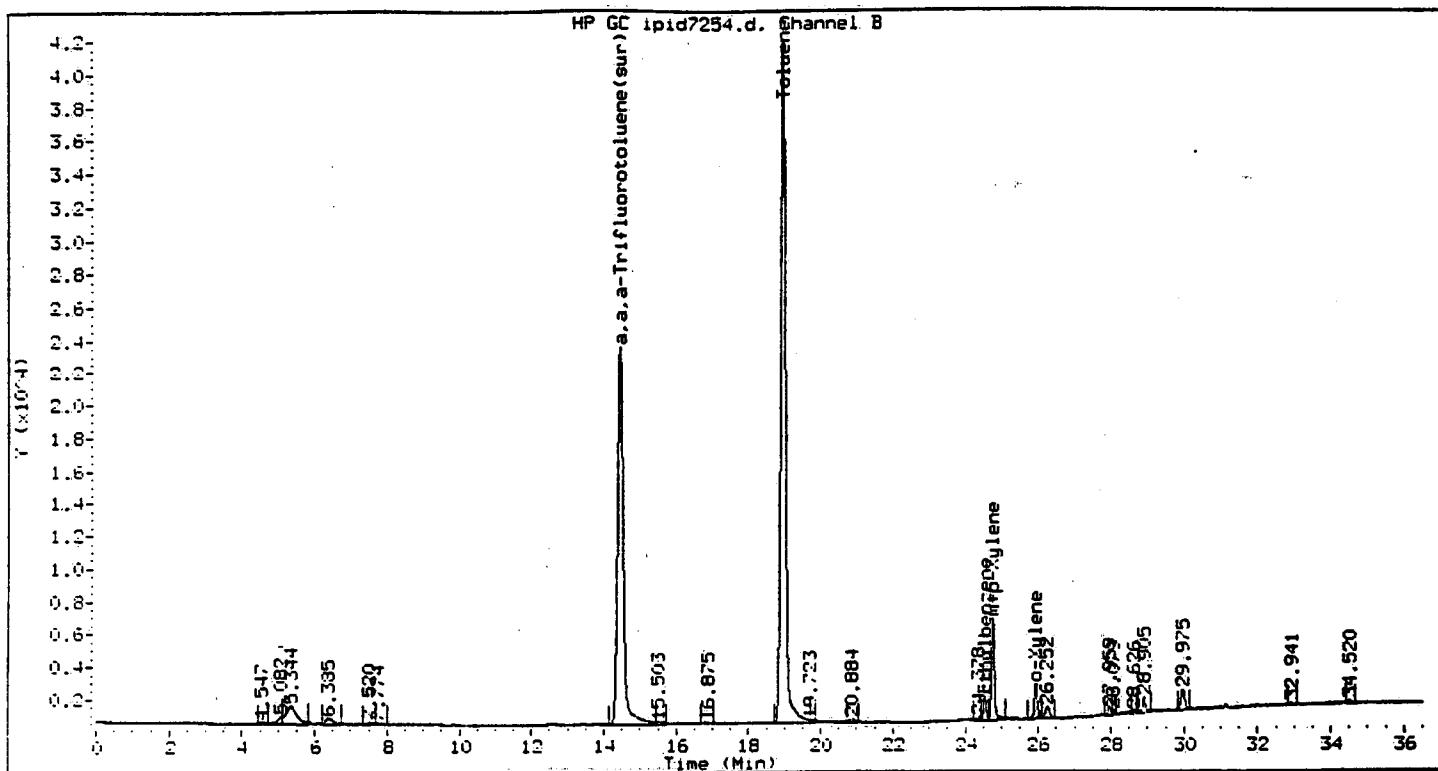
Lab Sample No: 169027
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7254.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 200.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	62
Toluene	3400	68
Ethylbenzene	94	76
Xylene (Total)	500	80



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : 169027;:200

Lab ID : 169027

Inj Date : 17-NOV-1999 13:19

Operator : SP

Cpnd Sublist: BTEX

Inst ID : VOAGC3.i

Dil Factor : 200

Sample Matrix : WATER

Sample Type: SAMPLE

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
m+p-Xylene	24.765	24.773	0.007	177203	1.739 347.839
o-Xylene	25.933	25.939	0.006	63162	0.725 144.969
Toluene	18.961	18.973	0.013	1859192	17.179 3435.714
Ethylbenzene	24.543	24.551	0.007	40878	0.472 94.321
Xylene (Total)	25.019	25.019	0.000	240365	2.479 495.743
a,a,a-Trifluorotoluene(sur)	14.456	14.466	0.010	1283101	29.327 29.327

Client ID: Field_Blank
Site: L.E. Carpenter

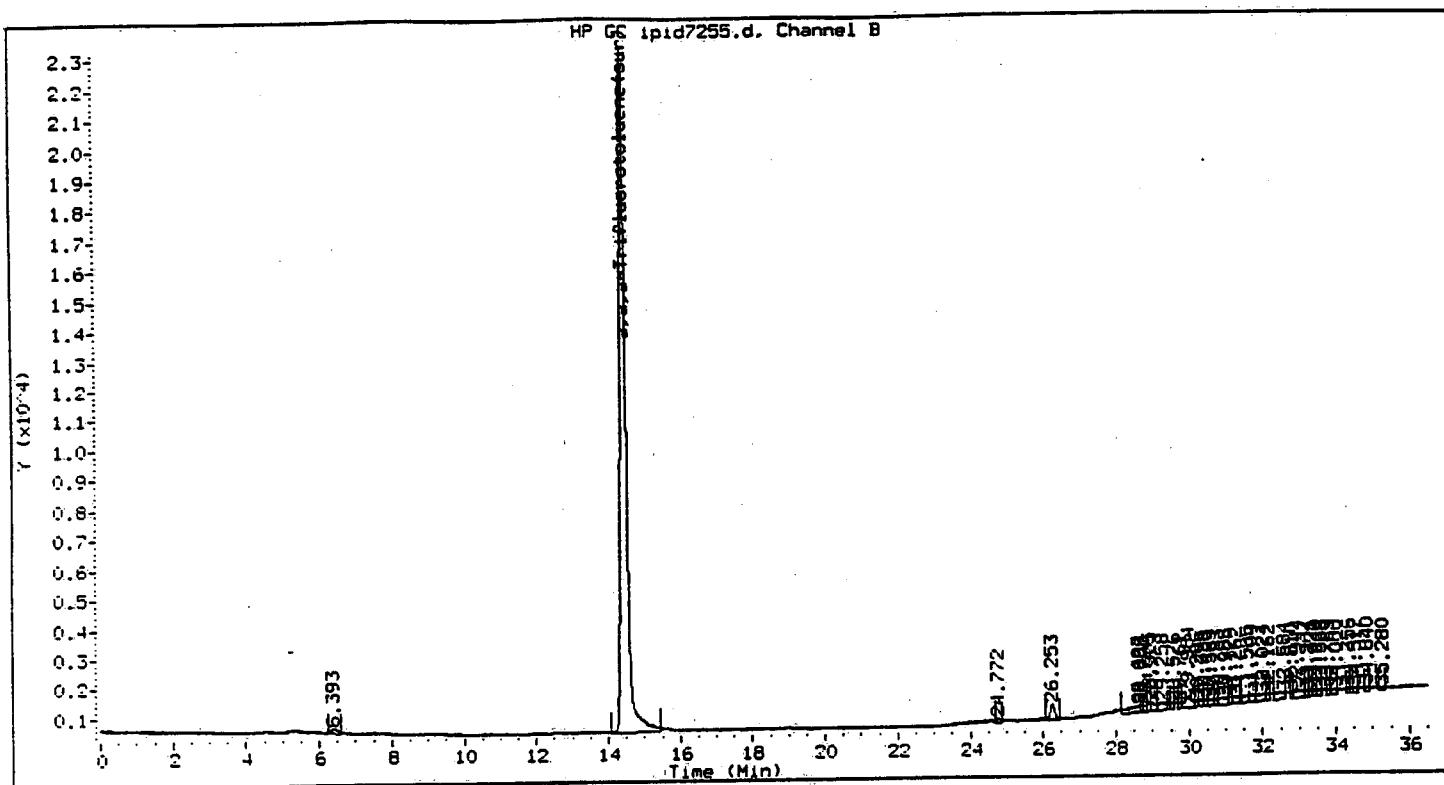
Lab Sample No: 169028
Lab Job No: V250

Date Sampled: 11/15/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7255.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.31
Toluene	ND	0.34
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : 169028

Lab ID : 169028

Inj Date : 17-NOV-1999 13:59

Operator : SP

Cpnd Sublist: BTEX

Inst ID : VOAGC3.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE (ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.460	14.466	0.006	1261064	28.823

Client ID: Trip_Blank
Site: L.E. Carpenter

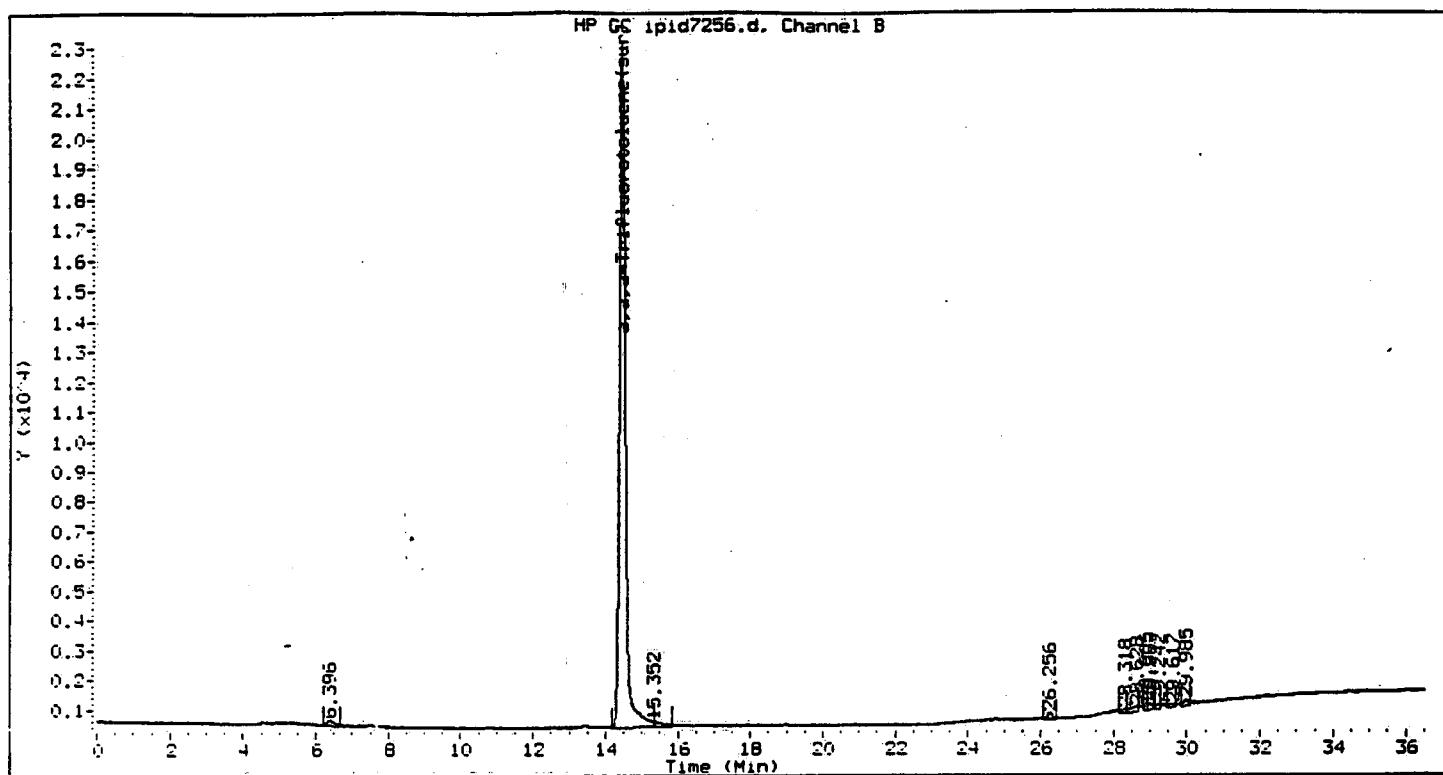
Lab Sample No: 169029
Lab Job No: V250

Date Sampled: 11/12/99
Date Received: 11/15/99
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7256.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
Benzene	ND	0.31
Toluene	ND	0.34
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : 169029

Lab ID : 169029

Inj Date : 17-NOV-1999 14:39

Operator : CK

Cpnd Sublist: BTEX

Inst ID : VOAGC3.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: SAMPLE

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.457	14.466	0.009	1262939	28.866	28.866

VOLATILE METHOD BLANK SUMMARY

LAB SAMPLE NO.

HG326

Date Analyzed: 11/22/99

Instrument ID: VOAGC2

Time Analyzed: 0936

Lab File ID: HPID2677

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT ID.	LAB SAMPLE NO	LAB FILE ID	TIME ANALYZED
01	19-9	169026	HPID2678	1030
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
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16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

page 1 of 1

Client ID: HG326
Site:

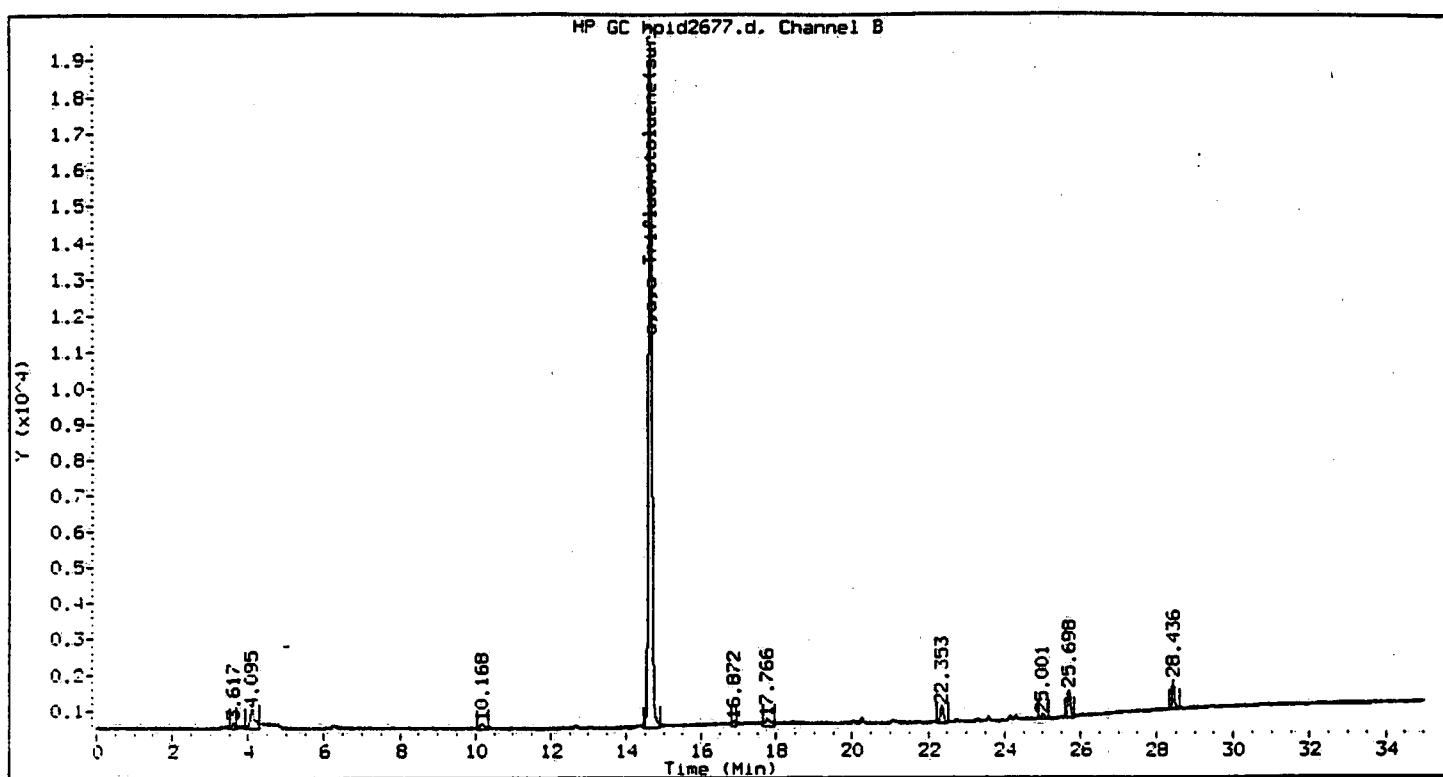
Lab Sample No: HG326
Lab Job No: V250

Date Sampled: _____
Date Received: _____
Date Analyzed: 11/22/99
GC Column: DB624
Instrument ID: VOAGC2.i
Lab File ID: hpid2677.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

**VOLATILE ORGANICS - GC/PID
METHOD 602**

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection</u> <u>Limit</u> <u>Units: ug/l</u>
TBA	ND	17
MTBE	ND	0.27
DIPE	ND	0.23
Benzene	ND	0.31
Toluene	ND	0.34
Chlorobenzene	ND	0.36
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40
1,3-Dichlorobenzene	ND	0.48
1,4-Dichlorobenzene	ND	0.45
1,2-Dichlorobenzene	ND	0.43
Naphthalene	ND	0.55



Method : /chem/VOAGC2.i/602/11-19-99/22NOV99.b/602_99.m

Sample Info : HG326

Lab ID : HG326

Inj Date : 22-NOV-1999 09:36

Operator : SP

Cpnd Sublist: all

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: BLANK

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(μ g/L)	(μ g/L)
a,a,a-Trifluorotoluene(sur)	14.634	14.621	0.013	566864	29.667	29.667

VOLATILE METHOD BLANK SUMMARY

IG321

Date Analyzed: 11/17/99

Instrument ID: VOAGC3

Time Analyzed: 1038

Lab File ID: IPID7250

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

CLIENT ID.	LAB SAMPLE NO	LAB FILE ID	TIME ANALYZED
01	19-8	169024	IPID7251
02	19-7	169025	IPID7252
03	19-6	169027	IPID7254
04	FIELD BLANK	169028	IPID7255
05	TRIP BLANK	169029	IPID7256
06	19-7MS	169025MS	IPID7259
07	19-7MSD	169025MSD	IPID7260
08			
09			
10			
11			
12			
13			
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30			

COMMENTS:

Client ID: IG321
Site:

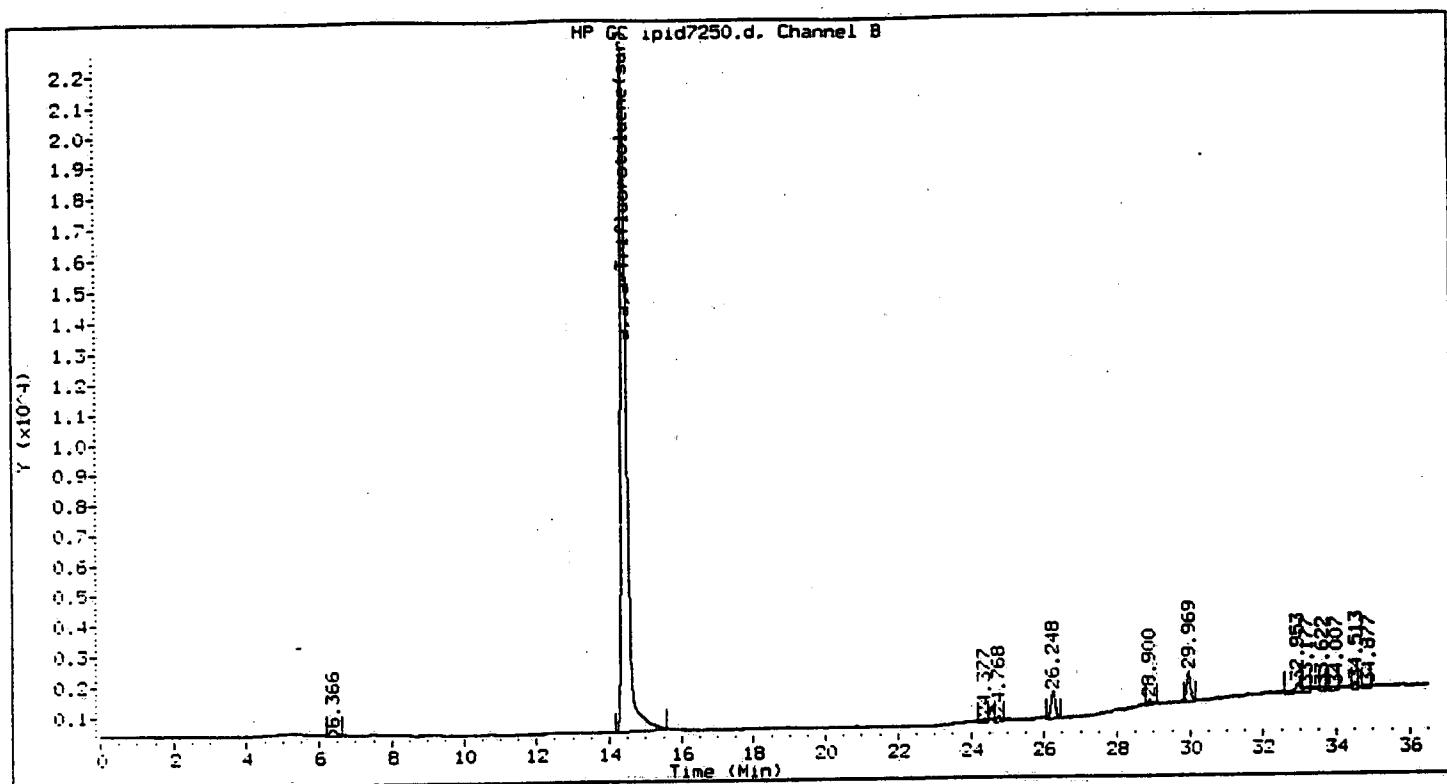
Lab Sample No: IG321
Lab Job No: V250

Date Sampled: _____
Date Received: _____
Date Analyzed: 11/17/99
GC Column: DB624
Instrument ID: VOAGC3.i
Lab File ID: ipid7250.d

Matrix: WATER
Level: LOW
Purge Volume: 5.0 mL
Final Volume: 0.0 mL
Dilution Factor: 1.0

VOLATILE ORGANICS - GC/PID
METHOD 602

<u>Parameter</u>	<u>Analytical Result</u> <u>Units: ug/l</u>	<u>Method Detection Limit</u> <u>Units: ug/l</u>
TBA	ND	17
MTBE	ND	0.27
DIPE	ND	0.23
Benzene	ND	0.31
Toluene	ND	0.34
Chlorobenzene	ND	0.36
Ethylbenzene	ND	0.38
Xylene (Total)	ND	0.40
1,3-Dichlorobenzene	ND	0.48
1,4-Dichlorobenzene	ND	0.45
1,2-Dichlorobenzene	ND	0.43
Naphthalene	ND	0.55



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : IG321

Lab ID : IG321

Inj Date : 17-NOV-1999 10:38

Operator : SP

Cpnd Sublist: all

Inst ID : VOAGC3.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: BLANK

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
a,a,a-Trifluorotoluene(sur)	14.450	14.466	0.015	1244544	28.446	28.446

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Instrument ID: VOAGC2

Calibration Date(s): 11/19/99 11/19/99

Calibration Time(s): 1605 1850

LAB FILE ID:	RRF2: HPID2674 RRF20: HPID2672		RRF5: HPID2670 RRF40: HPID2673	RRF10: HPID2671	
COMPOUND	RRF2	RRF5	RRF10	RRF20	RRF40
TBA **	193	204	184	170	
MTBE	29516	28613	28601	25390	23098
DIPE	29241	27894	28554	24796	24455
Benzene	55028	52068	54818	48772	48620
Toluene	54952	49759	52159	47033	46404
Chlorobenzene	60204	57866	58917	52712	51983
Ethylbenzene	48578	44211	47418	43265	42416
Xylene (Total)	53693	49556	52864	47762	46827
1,3-Dichlorobenzene	50853	48071	48781	44040	43297
1,4-Dichlorobenzene	51772	49312	49346	44327	43612
1,2-Dichlorobenzene	43346	41543	40880	36698	36181
Naphthalene	44626	35531	34656	31047	31559
a,a,a-Trifluorotoluene(sur)	18920	19119	19287	19284	18929

** TBA Calibration Levels are RF200, RF400, RF1000, and RF2000

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Instrument ID: VOAGC2

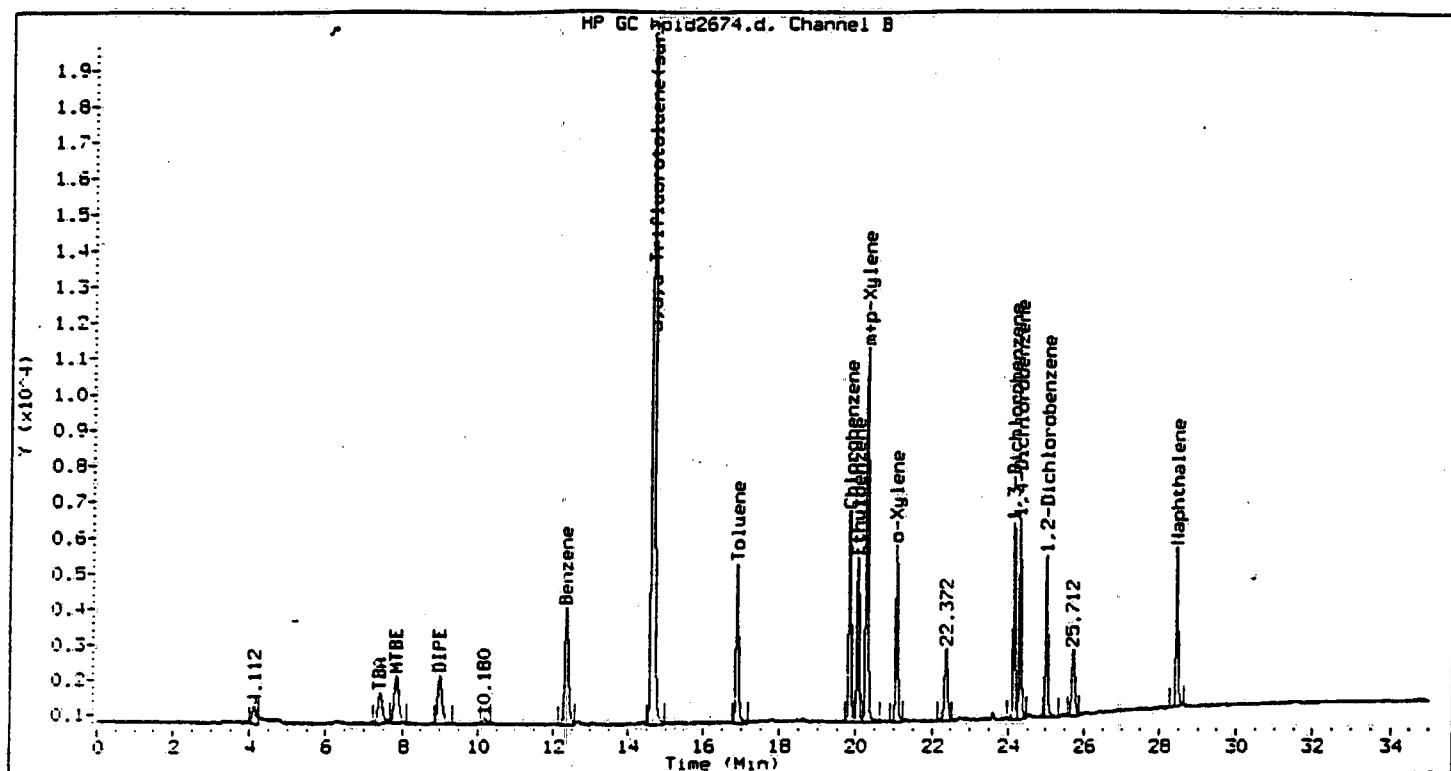
Calibration Date(s): 11/19/99 11/19/99

Calibration Time(s): 1605 1850

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
TBA **	AVRG	188	7.6*
MTBE	AVRG	27044	10*
DIPE	AVRG	26988	8.2*
Benzene	AVRG	51861	6.0*
Toluene	AVRG	50061	7.1*
Chlorobenzene	AVRG	56336	6.6*
Ethylbenzene	AVRG	45178	5.9*
Xylene (Total)	AVRG	50140	6.1*
1,3-Dichlorobenzene	AVRG	47008	6.9*
1,4-Dichlorobenzene	AVRG	47674	7.4*
1,2-Dichlorobenzene	AVRG	39730	7.9*
Naphthalene	AVRG	35484	15*
a,a,a-Trifluorotoluene(sur)	AVRG	19108	0.9*

** TBA Calibration Levels are RF200, RF400, RF1000, and RF2000

* Compounds with required maximum %RSD values.



Method : /chem/VOAGC2.i/602/11-19-99/19NOV99.b/602_99.m

Sample Info : HSTD002

Lab ID : HSTD002

Inj Date : 19-NOV-1999 18:50

Operator : CK

Cpnd Sublist: all

Inst ID : VOAGC2.i

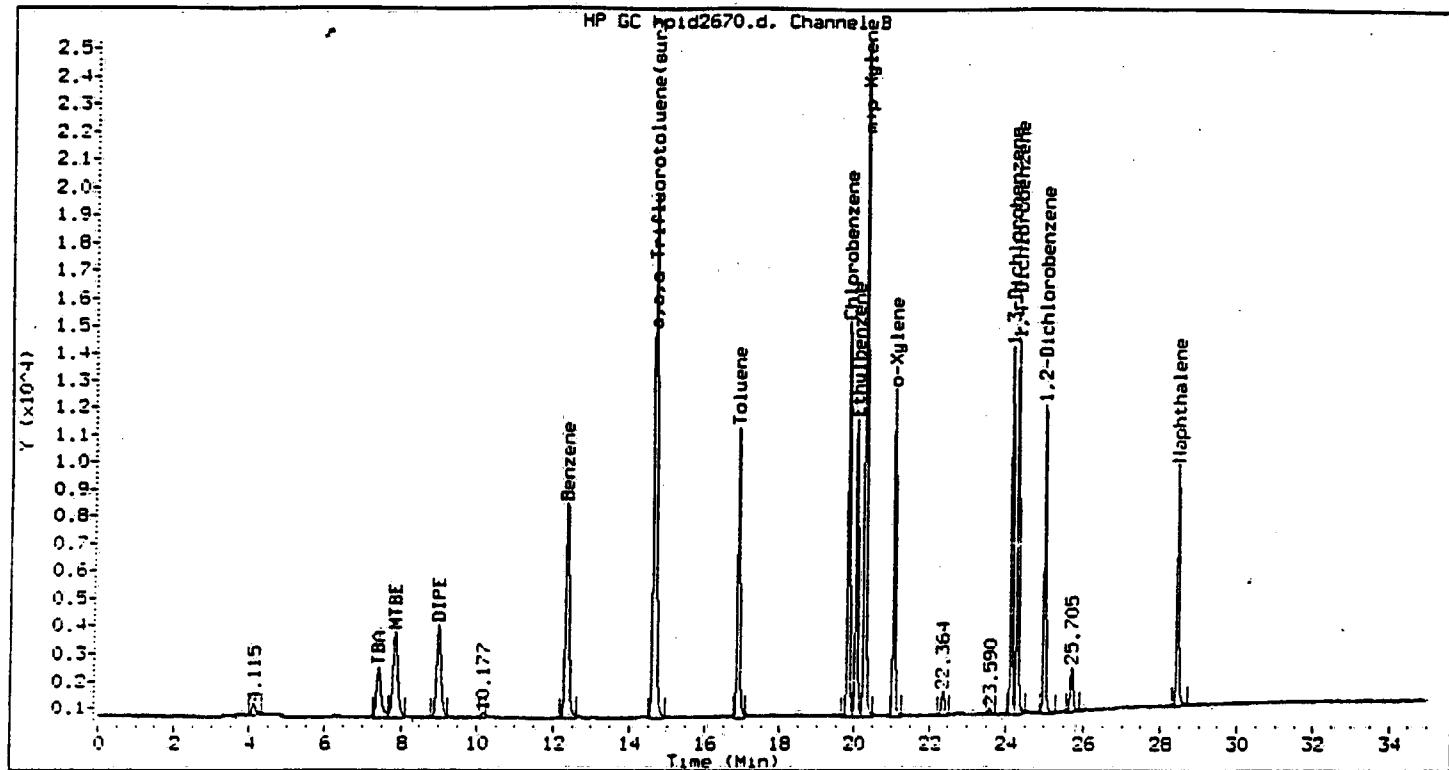
Dil Factor : 1

Sample Matrix : WATER

Sample Type: CALIB_1

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
o-Xylene	21.070	21.066	0.004	101118	2.000
m+p-Xylene	20.282	20.278	0.004	221038	4.000
TBA	7.412	7.394	0.019	38619	200.000
MTBE	7.850	7.823	0.026	59031	2.000
DIPN	9.000	8.980	0.021	58482	2.000
Benzene	12.358	12.343	0.015	110056	2.000
Toluene	16.891	16.883	0.008	109903	2.000
Chlorobenzene	19.832	19.826	0.006	120407	2.000
Ethylbenzene	20.050	20.045	0.005	97156	2.000

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total)	25.019	25.019	0.000	322156	6.000	6.000
1,3-Dichlorobenzene	24.154	24.151	0.003	101705	2.000	2.000
1,4-Dichlorobenzene	24.313	24.310	0.003	103544	2.000	2.000
1,2-Dichlorobenzene	25.010	25.008	0.002	86693	2.000	2.000
Naphthalene	28.456	28.451	0.005	89253	2.000	2.000
a,a,a-Trifluorotoluene(sur)	14.659	14.650	0.009	567601	30.000	30.000



Method : /chem/VOAGC2.i/602/11-19-99/19NOV99.b/602_99.m

Sample Info : HSTD005

Lab ID : HSTD005

Inst ID : VOAGC2.i

Inj Date : 19-NOV-1999 16:05

Dil Factor : 1

Operator : CK

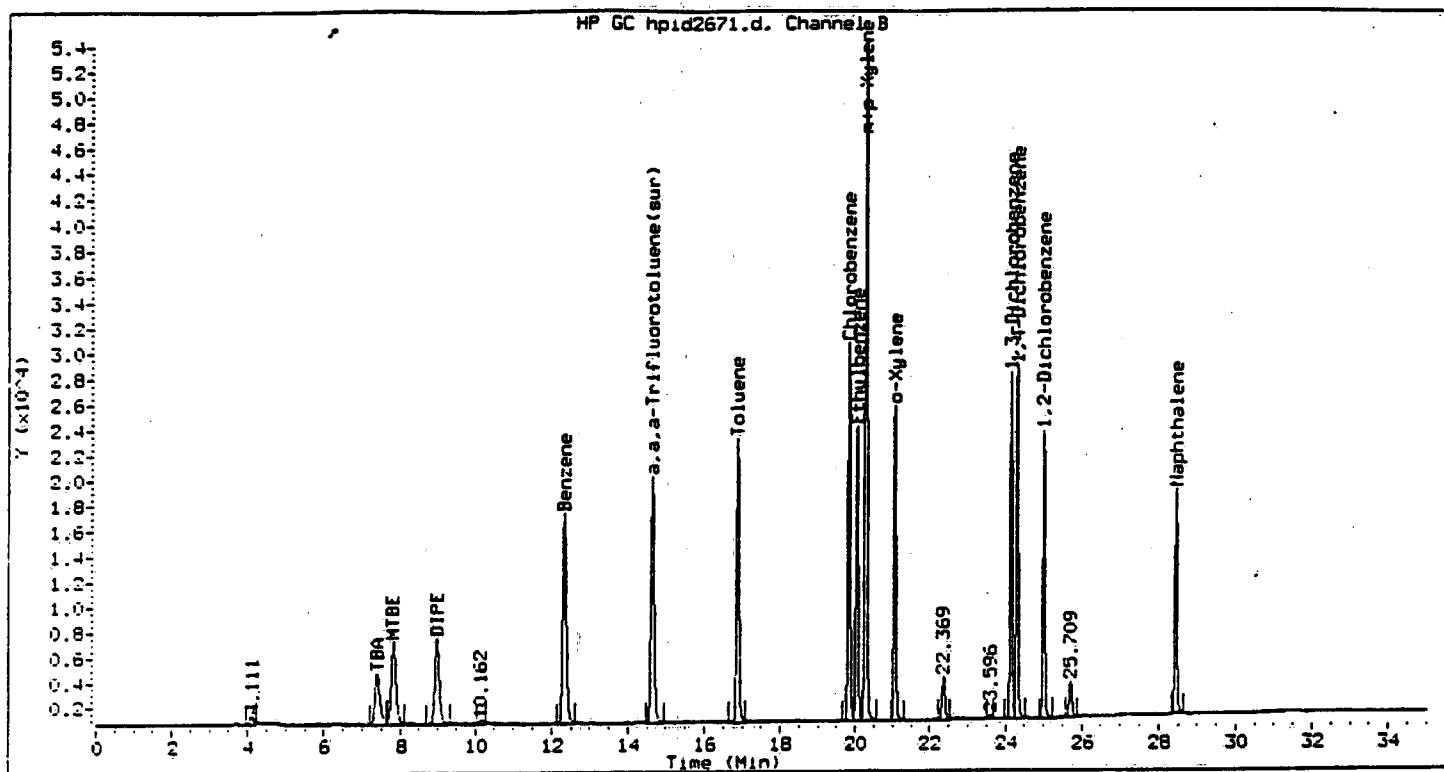
Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_2

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					(ug/L)	(ug/L)
o-Xylene	21.062	21.066	0.004	236763	5.037	5.037
m+p-Xylene	20.275	20.278	0.002	506578	9.797	9.797
TBA	7.415	7.394	0.021	81576	434.446	434.446
MTBE	7.853	7.823	0.029	143066	5.290	5.290
DIPE	9.000	8.980	0.021	139468	5.168	5.168
Benzene	12.353	12.343	0.010	260341	5.020	5.020
Toluene	16.887	16.883	0.004	248795	4.970	4.970
Chlorobenzene	19.826	19.826	0.001	289332	5.136	5.136
Ethylbenzene	20.043	20.045	0.002	221055	4.893	4.893

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total)	25.019	25.019	0.000	743341	14.825	14.825
1,3-Dichlorobenzene	24.145	24.151	0.006	240353	5.113	5.113
1,4-Dichlorobenzene	24.304	24.310	0.006	246561	5.172	5.172
1,2-Dichlorobenzene	25.000	25.008	0.008	207716	5.228	5.228
Naphthalene	28.443	28.451	0.008	177656	5.007	5.007
a,a,a-Trifluorotoluene(sur)	14.656	14.650	0.006	573560	30.017	30.017



Method : /chem/VOAGC2.i/602/11-19-99/19NOV99.b/602_99.m

Sample Info : HSTD010

Lab ID : HSTD010

Inst ID : VOAGC2.i

Inj Date : 19-NOV-1999 16:46

Dil Factor : 1

Operator : CK

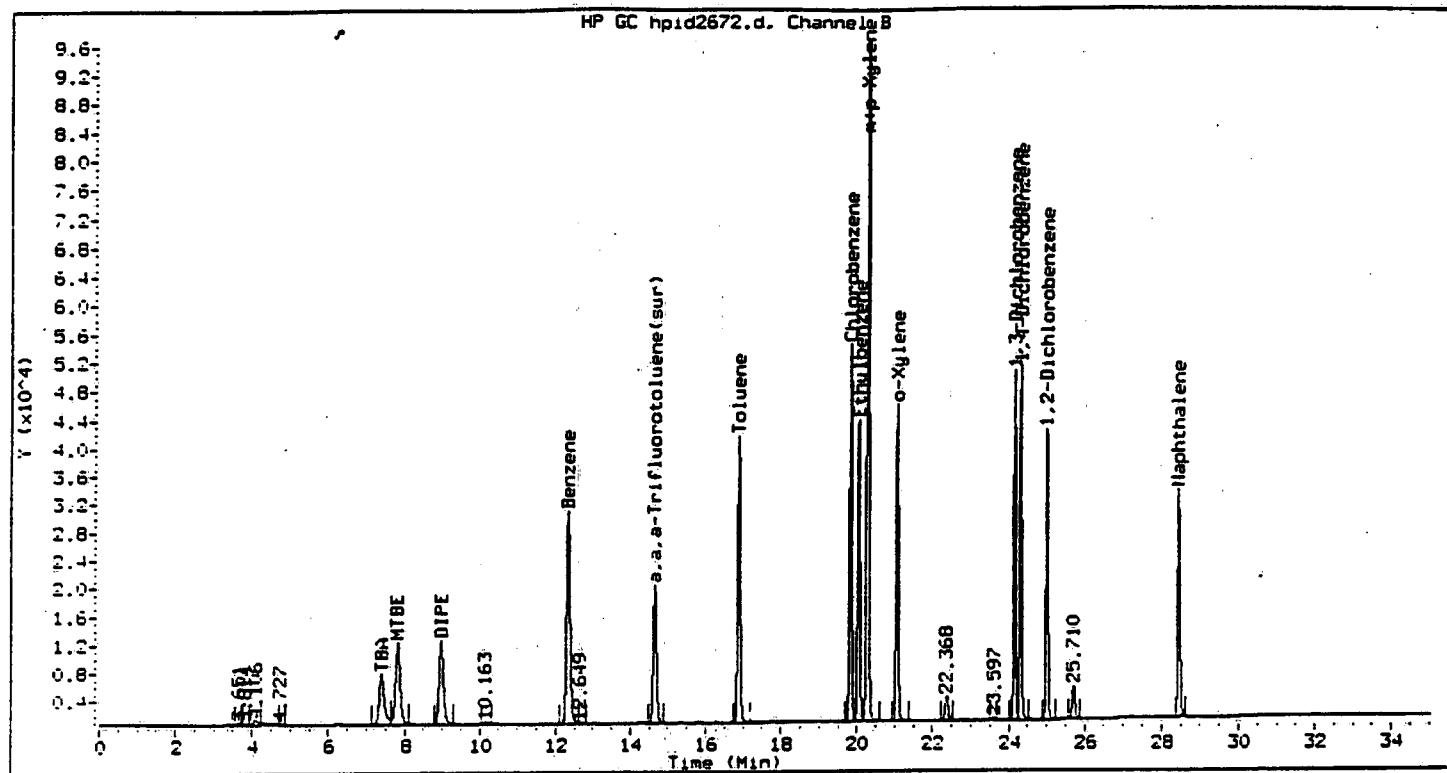
Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_3

Compounds	CONCENTRATIONS					
	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	FINAL
o-Xylene	21.065	21.066	0.000	491191	10.469	10.469
m+p-Xylene	20.278	20.278	0.001	1094726	21.064	21.064
TBA	7.398	7.394	0.004	184016	1008.978	1008.978
MTBE	7.830	7.823	0.006	286012	10.732	10.732
DIPE	8.984	8.980	0.004	285542	10.670	10.670
Benzene	12.342	12.343	0.000	548181	10.581	10.581
Toluene	16.884	16.883	0.001	521586	10.403	10.403
chlorobenzene	19.827	19.826	0.000	589173	10.530	10.530
ethylbenzene	20.045	20.045	0.000	474177	10.440	10.440

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/L)	FINAL (ug/L)
Xylene (Total)	25.019	25.019	0.000	1585917	31.538	31.538
1,3-Dichlorobenzene	24.150	24.151	0.001	487811	10.436	10.436
1,4-Dichlorobenzene	24.310	24.310	0.000	493456	10.440	10.440
1,2-Dichlorobenzene	25.007	25.008	0.002	408803	10.408	10.408
Naphthalene	28.450	28.451	0.001	346557	9.770	9.770
a,a,a-Trifluorotoluene(sur)	14.648	14.650	0.002	578601	30.285	30.285



Method : /chem/VOAGC2.i/602/11-19-99/19NOV99.b/602_99.m

Sample Info : HSTD020

Lab ID : HSTD020

Inst ID : VOAGC2.i

Inj Date : 19-NOV-1999 17:28

Dil Factor : 1

Operator : CK

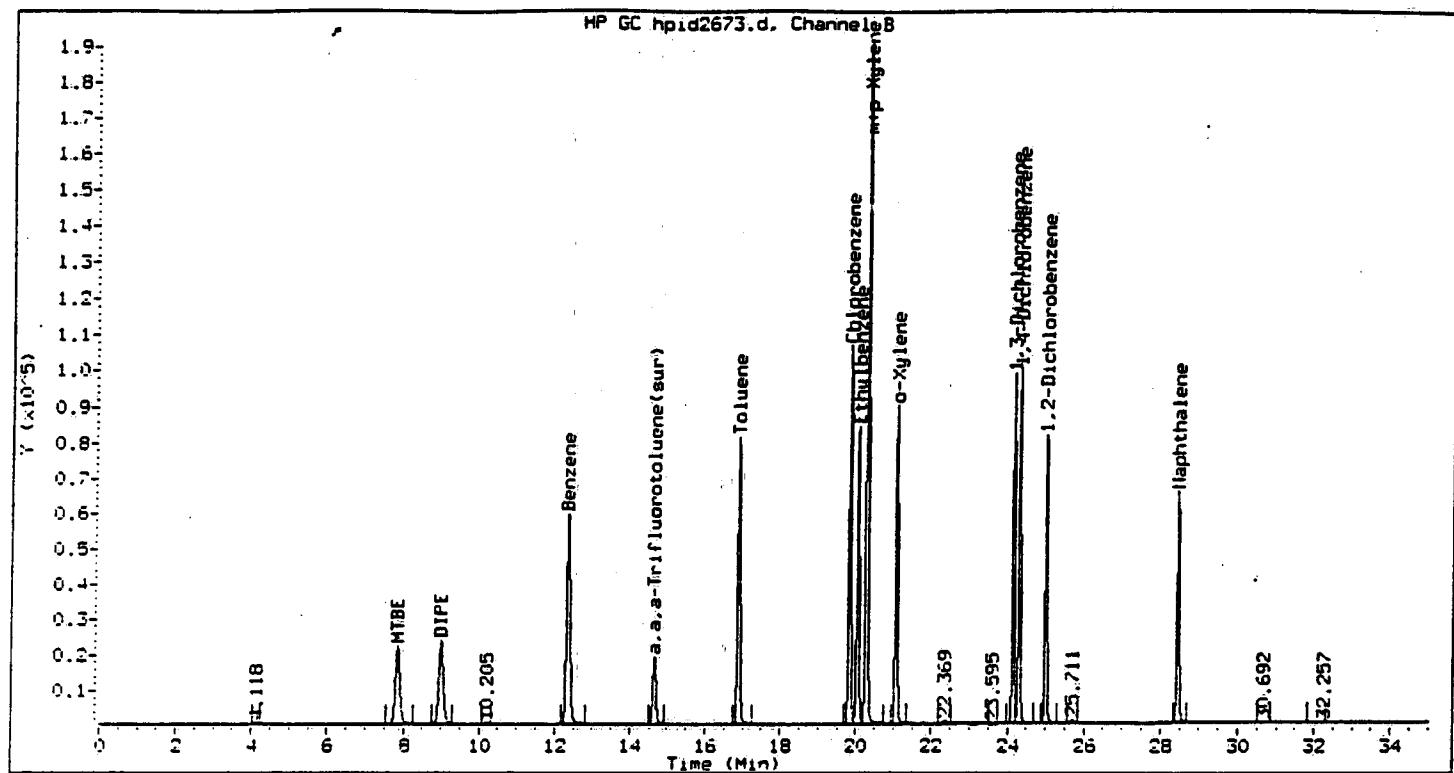
Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_4

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					(ug/L)	(ug/L)
o-Xylene	21.066	21.066	0.000	888197	19.232	19.232
m,p-Xylene	20.278	20.278	0.000	1977493	38.737	38.737
TBA	7.394	7.394	0.000	340057	1872.955	1872.955
MTBE	7.823	7.823	0.000	507795	19.530	19.530
DIPPE	8.980	8.980	0.000	495931	18.955	18.955
Benzene	12.343	12.343	0.000	975433	19.199	19.139
Toluene	16.883	16.883	0.000	940667	19.018	19.018
chlorobenzene	19.826	19.826	0.000	1054233	19.180	19.180
Ethylbenzene	20.045	20.045	0.000	865305	19.335	19.335

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/L)	FINAL (ug/L)
Xylene (Total)	25.019	25.019	0.000	2865690	57.978	57.978
1,3-Dichlorobenzene	24.151	24.151	0.000	880801	19.122	19.122
1,4-Dichlorobenzene	24.310	24.310	0.000	886535	19.036	19.036
1,2-Dichlorobenzene	25.008	25.008	0.000	733966	18.945	18.945
Naphthalene	28.451	28.451	0.000	620937	17.372	17.372
a,a,a-Trifluorotoluene(sur)	14.650	14.650	0.000	578535	30.378	30.378



Method : /chem/VOAGC2.i/602/11-19-99/19NOV99.b/602_99.m

Sample Info : HSTD040

Lab ID : HSTD040

Inst ID : VOAGC2.i

Inj Date : 19-NOV-1999 18:09

Dil Factor : 1

Operator : CK

Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_5

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN (ug/L)	FINAL (ug/L)
o-Xylene	21.066	21.066	0.000	1743173	37.034 37.034
m,p-Xylene	20.280	20.278	0.002	3876068	74.748 74.748
MTBE	7.849	7.823	0.026	923935	35.121 35.121
DIPE	9.002	8.980	0.023	978194	36.435 36.435
Benzene	12.359	12.343	0.016	1944788	37.527 37.527
Toluene	16.888	16.883	0.005	1856144	36.627 36.627
Chlorobenzene	19.829	19.826	0.002	2079320	37.069 37.069
Ethylbenzene	20.046	20.045	0.002	1696629	37.291 37.291
Xylene (Total)	25.019	25.019	0.000	5619241	111.804 111.804

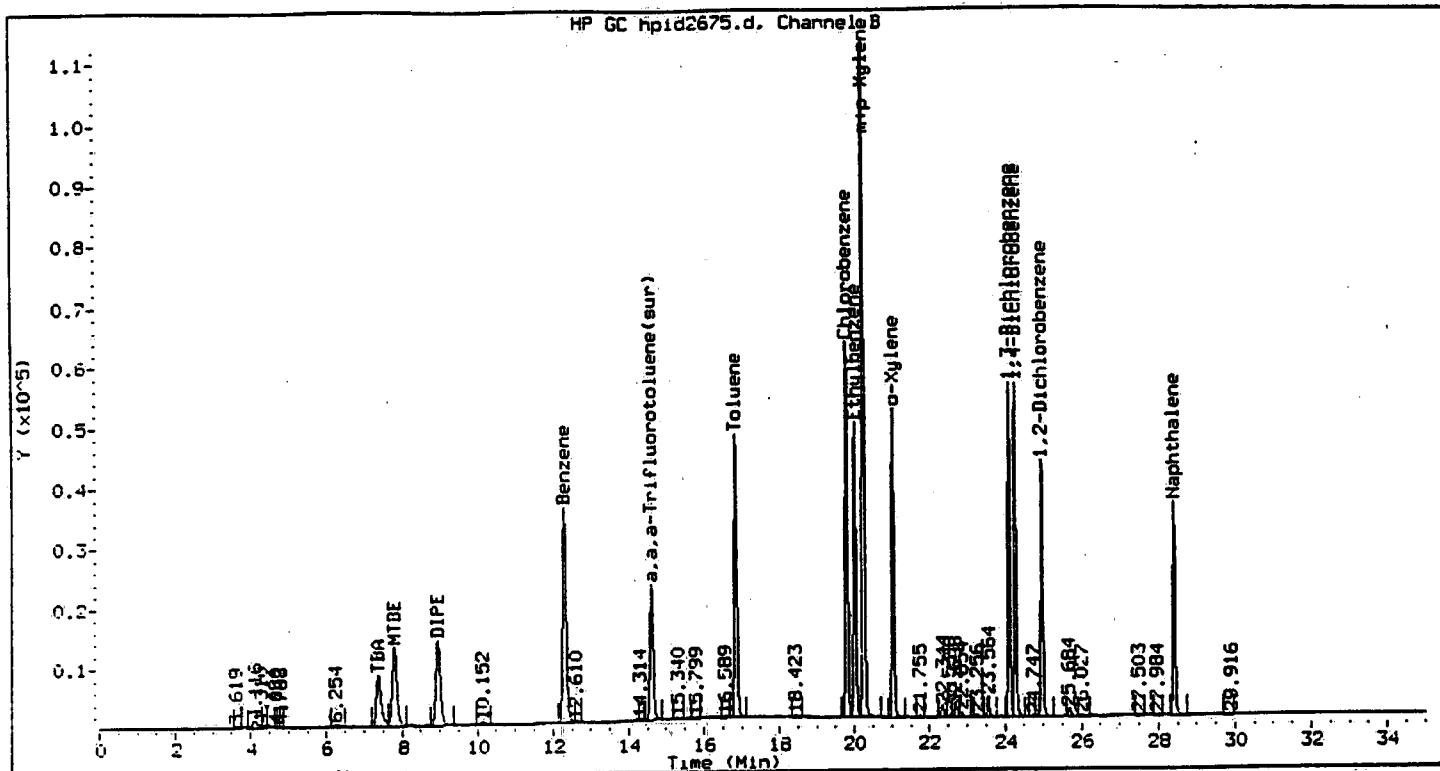
Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)
1,3-Dichlorobenzene	24.150	24.151	0.001	1731866	36.790 36.790
1,4-Dichlorobenzene	24.310	24.310	0.000	1744487	36.578 36.578
1,2-Dichlorobenzene	25.007	25.008	0.001	1447251	36.396 36.396
Naphthalene	28.451	28.451	0.000	1262350	33.139 33.139
a,a,a-Trifluorotoluene (sur)	14.658	14.650	0.008	567882	30.007 30.007

VOLATILE ORGANICS CONTINUING CALIBRATION CHECK

Instrument ID: VOAGC2 Calibration Date: 11/22/99 Time: 0745
 Lab File ID: HPID2675 Init. Calib. Date(s): 11/19/99 11/19/99
 Heated Purge: (Y/N) N Init. Calib. Times: 1605 1850

COMPOUND	RRF	RRF20	MIN RRF	%D	MAX %D
TBA **	187.77	186.70		0.6	50.0
MTBE	27043.61	28108.75		-3.9	50.0
DIPE	26988.04	28768.70		-6.4	50.0
Benzene	51861.13	57398.50		-10.5	23.0
Toluene	50061.21	54180.50		-8.2	22.5
Chlorobenzene	56336.37	61123.30		-8.3	19.5
Ethylbenzene	45177.53	49238.65		-8.8	37.0
Xylene (Total)	50140.23	55130.03		-9.8	50.0
1,3-Dichlorobenzene	47008.28	49140.90		-4.5	27.5
1,4-Dichlorobenzene	47673.75	48682.80		-2.1	30.5
1,2-Dichlorobenzene	39729.92	38384.45		3.4	32.0
Naphthalene	35483.80	34979.20		1.4	50.0
a,a,a-Trifluorotoluene(sur)	19107.86	22121.10		-15.6	22.0

** TBA Continuing Calibration Level is RF2000.



Method : /chem/VOAGC2.i/602/11-19-99/22NOV99.b/602_99.m

Sample Info : HSTD020

Lab ID : HSTD020

Inj Date : 22-NOV-1999 07:45

Operator : SP

Cpnd Sublist: all

Inst ID : VOAGC2.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: CCALIB_4

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(none)	(ug/L)
o-Xylene	21.038	21.038	0.000	1014108	21.575	21.575
m,p-Xylene	20.250	20.250	0.000	2293694	44.358	44.358
TBA	7.379	7.379	0.000	373411	1988.658	1988.658
MTBE	7.806	7.806	0.000	562175	20.788	20.788
DIPPE	8.962	8.962	0.000	575374	21.320	21.320
Benzene	12.313	12.313	0.000	1147970	22.135	22.135
Toluene	16.854	16.854	0.000	1083610	21.646	21.646
Chlorobenzene	19.798	19.798	0.000	1222466	21.699	21.699
Ethylbenzene	20.017	20.017	0.000	984773	21.798	21.798

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (none)	FINAL (ug/L)
Xylene (Total)	25.019	25.019	0.000	3307802	65.971	65.971
1,3-Dichlorobenzene	24.121	24.121	0.000	982818	20.907	20.907
1,4-Dichlorobenzene	24.280	24.280	0.000	973656	20.423	20.423
1,2-Dichlorobenzene	24.978	24.978	0.000	767689	19.323	19.323
Naphthalene	28.420	28.420	0.000	699584	19.716	19.716
a,a,a-Trifluorotoluène(sur)	14.621	14.621	0.000	663633	34.731	34.731

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Instrument ID: VOAGC3

Calibration Date(s): 11/01/99 11/01/99

Calibration Time(s): 0741 1118

LAB FILE ID:	RRF2: IPID7016 RRF20: IPID7014	RRF5: IPID7012 RRF40: IPID7015	RRF10: IPID7013		
COMPOUND	RRF2	RRF5	RRF10	RRF20	RRF40
TBA **	429	440	455	439	
MTBE	46668	44805	47187	45916	44211
DIPE	47947	52939	56046	55651	55666
Benzene	113632	118571	121262	121220	123224
Toluene	109469	106544	109239	106606	108988
Chlorobenzene	103522	104686	109010	108592	108193
Ethylbenzene	85818	85591	86060	87357	88568
Xylene (Total)	96550	96454	96384	97209	98260
1, 3-Dichlorobenzene	73948	76661	78770	80440	80999
1, 4-Dichlorobenzene	94224	96046	93336	96452	95735
1, 2-Dichlorobenzene	65954	65596	67541	69372	70946
Naphthalene	65075	56953	56972	60285	55815
a,a,a-Trifluorotoluene (sur)	43670	42826	43441	44180	44640

** TBA Calibration Levels are RF200, RF400, RF1000, and RF2000

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Instrument ID: VOAGC3

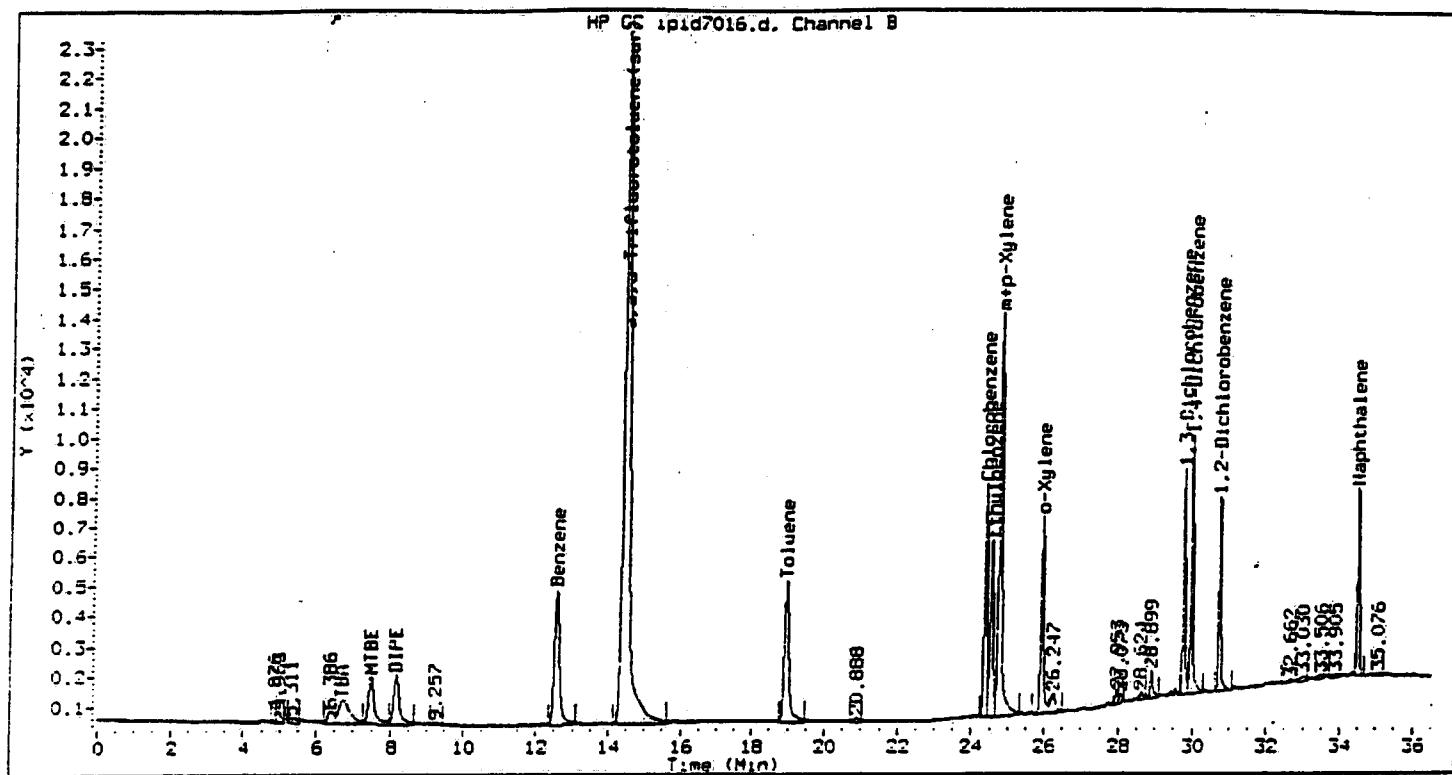
Calibration Date(s) : 11/01/99 11/01/99

Calibration Time(s) : 0741 1118

COMPOUND	CURVE	COEFFICIENT A1	%RSD OR R^2
TBA **	AVRG	441	2.4*
MTBE	AVRG	45758	2.7*
DIPE	AVRG	53650	6.4*
Benzene	AVRG	119582	3.1*
Toluene	AVRG	108169	1.4*
Chlorobenzene	AVRG	106801	2.4*
Ethylbenzene	AVRG	86679	1.4*
Xylene (Total)	AVRG	96972	0.8*
1,3-Dichlorobenzene	AVRG	78164	3.7*
1,4-Dichlorobenzene	AVRG	95158	1.4*
1,2-Dichlorobenzene	AVRG	67882	3.3*
Naphthalene	AVRG	59020	6.4*
a,a,a-Trifluorotoluene (sur)	AVRG	43752	1.6*

** TBA Calibration Levels are RF200, RF400, RF1000, and RF2000

* Compounds with required maximum %RSD values.



Method : /chem/VOAGC3.i/602/11-01-99/01nov99.b/602_99.m

Sample Info : ISTD002

Lab ID : ISTD002

Inst ID : VOAGC3.i

Inj Date : 01-NOV-1999 11:18

Dil Factor : 1

Operator : SP

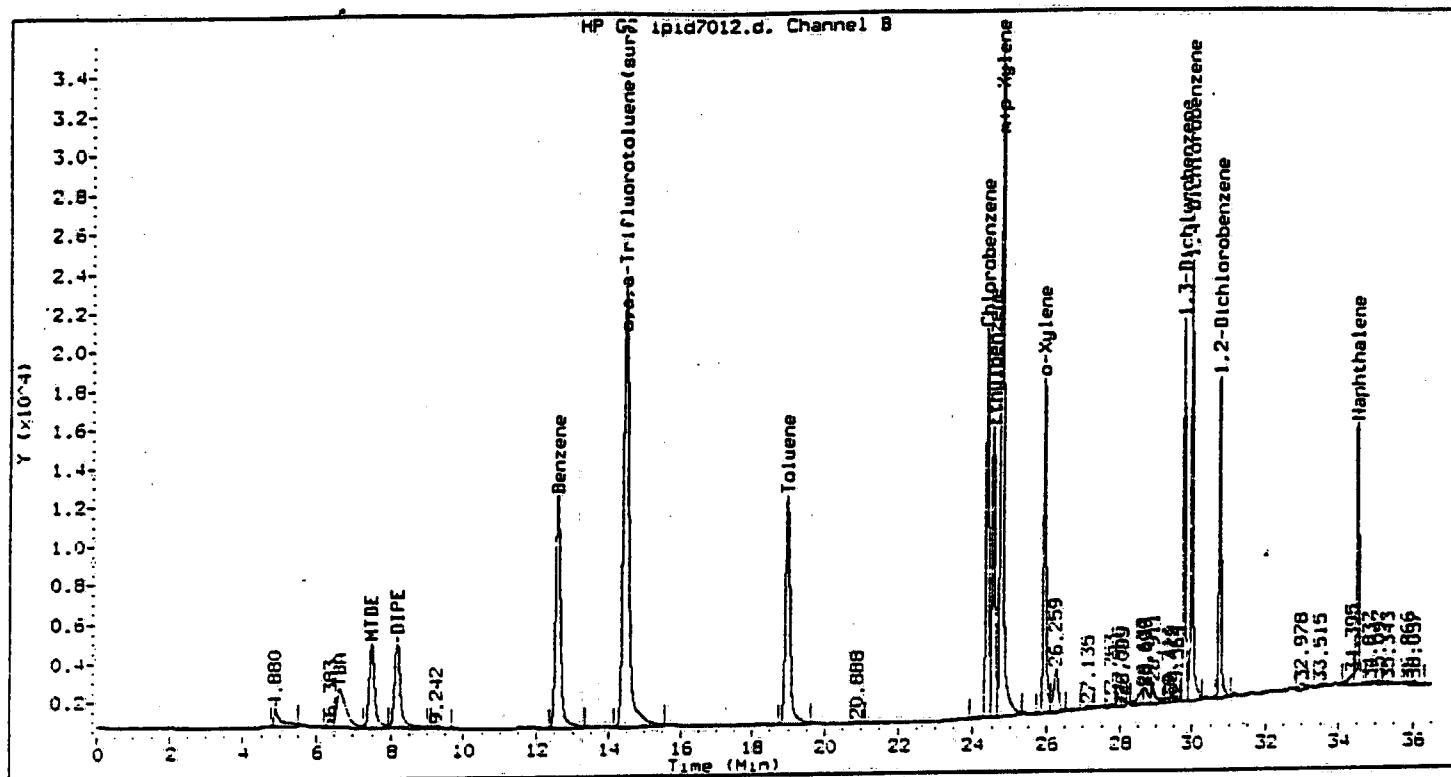
Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_1

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					(ug/L)	(ug/L)
o-Xylene	25.927	25.936	0.009	170721	1.959	1.959
m-p-Xylene	24.758	24.769	0.011	408579	4.010	4.010
TBA	6.712	6.712	0.000	85815	194.647	194.647
MTBE	7.476	7.477	0.000	93337	2.040	2.040
DiPE	8.158	8.163	0.005	95894	1.787	1.787
Benzene	12.561	12.569	0.008	227265	1.900	1.900
Toluene	18.955	18.967	0.012	218938	2.024	2.024
Chlorobenzene	24.371	24.381	0.010	207044	1.939	1.939
Ethylbenzene	24.536	24.547	0.010	171637	1.980	1.980

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total)	25.019	25.019	0.000	579300	5.974	5.974
1,3-Dichlorobenzene	29.763	29.771	0.009	147896	1.892	1.892
1,4-Dichlorobenzene	29.976	29.984	0.009	188448	1.980	1.980
1,2-Dichlorobenzene	30.734	30.743	0.009	131907	1.943	1.943
Naphthalene	34.510	34.518	0.008	130150	2.205	2.205
a,a,a-Trifluorotoluene(sur)	14.449	14.459	0.010	1310116	29.944	29.944



Method : /chem/VOAGC3.i/602/11-01-99/01nov99.b/602_99.m

Sample Info : ISTD005

Lab ID : ISTD005

Inj Date : 01-NOV-1999 08:21

Inst ID : VOAGC3.i

Dil Factor : 1

Operator : SP

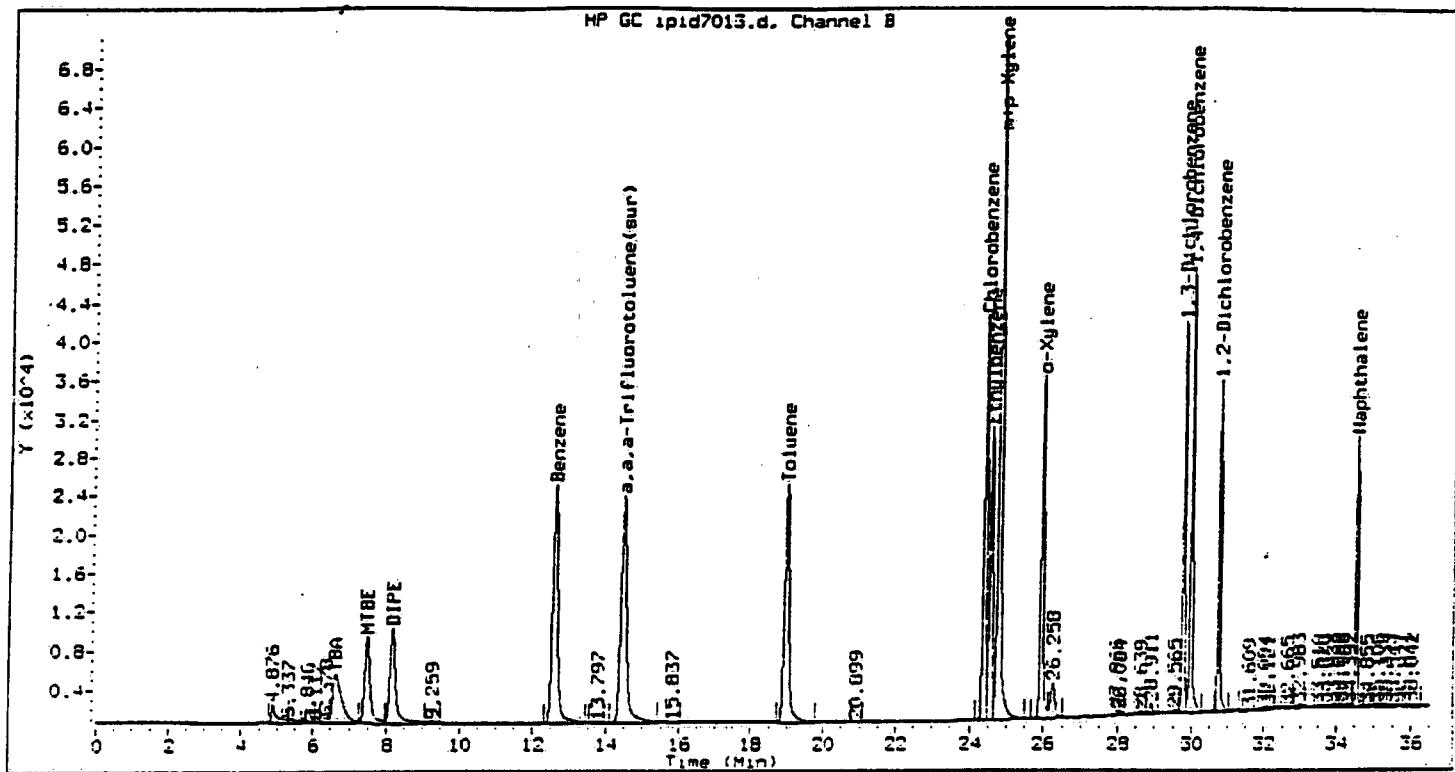
Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_2

Compounds	CONCENTRATIONS					
	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	FINAL
o-Xylene	25.940	25.936	0.004	431703	4.689	4.689
m,p-Xylene	24.773	24.769	0.004	1015104	9.409	9.409
TBA	6.629	6.712	0.083	176013	406.157	406.157
MTBE	7.486	7.477	0.009	224026	4.982	4.982
DIPS	8.171	8.163	0.007	264695	5.032	5.032
Benzene	12.579	12.569	0.009	592856	4.944	4.944
Toluene	18.975	18.967	0.007	532720	4.868	4.868
chlorobenzene	24.386	24.381	0.005	523429	4.490	4.490
Ethylbenzene	24.552	24.547	0.005	427953	4.783	4.783

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ug/L)	FINAL (ug/L)
Xylene (Total)	25.019	25.019	0.000	1446807	14.100	14.100
1,3-Dichlorobenzene	29.774	29.771	0.003	383305	4.912	4.912
1,4-Dichlorobenzene	29.987	29.984	0.003	480229	4.067	4.067
1,2-Dichlorobenzene	30.745	30.743	0.003	327978	4.888	4.888
Naphthalene	34.523	34.518	0.005	284764	5.064	5.064
a,a,a-Trifluorotoluene(sur)	14.467	14.459	0.008	1284783	29.780	29.780



Method : /chem/VOAGC3.i/602/11-01-99/01nov99.b/602_99.m

Sample Info : ISTD010

Lab ID : ISTD010

Inst ID : VOAGC3.i

Inj Date : 01-NOV-1999 09:01

Dil Factor : 1

Operator : SP

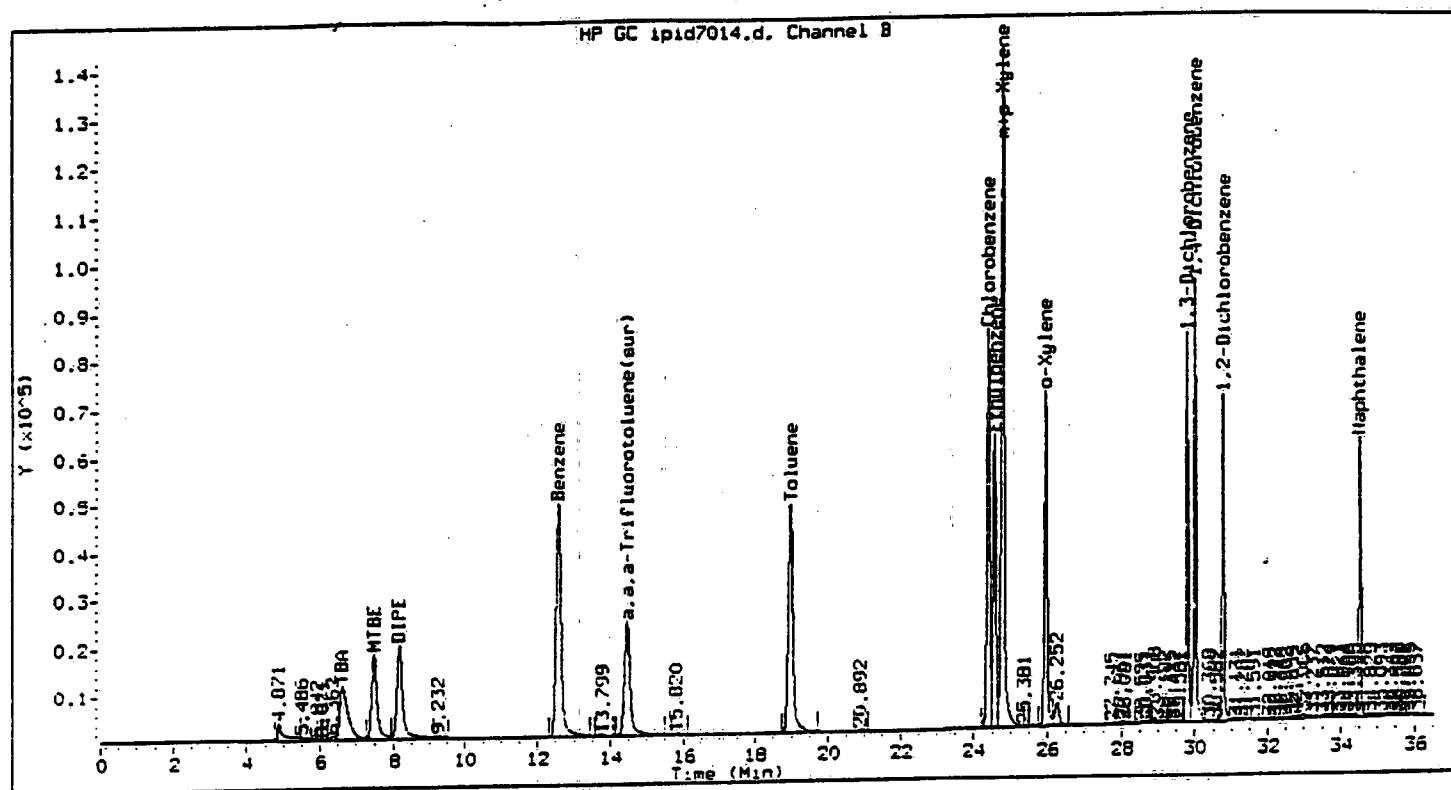
Sample Matrix : WATER

Comp Sublist: all

Sample Type: CALIB_3

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					(ug/L)	(ug/L)
o-Xylene	25.940	25.936	0.004	874146	9.617	9.617
m,p-Xylene	24.773	24.769	0.004	2017396	19.008	19.008
TBA	6.622	6.712	0.090	455195	1037.316	1037.316
MTBE	7.482	7.477	0.005	471870	10.365	10.365
DIPE	8.168	8.163	0.004	560464	10.483	10.483
Benzene	12.575	12.569	0.005	1212624	10.085	10.085
Toluene	18.973	18.967	0.006	1092386	9.986	9.986
Chlorobenzene	24.386	24.381	0.005	1090099	9.506	9.506
Ethylbenzene	24.551	24.547	0.005	860598	9.711	9.711

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
Xylene (Total)	25.019	25.019	0.000	2891522	28.614 28.614
1,3-Dichlorobenzene	29.775	29.771	0.004	787705	10.071 10.071
1,4-Dichlorobenzene	29.988	29.984	0.003	933358	8.342 8.342
1,2-Dichlorobenzene	30.746	30.743	0.003	675410	10.049 10.049
Naphthalene	34.524	34.518	0.006	569718	10.098 10.098
a,a,a-Trifluorotoluene(sur)	14.465	14.459	0.006	1303231	30.155 30.155



Method : /chem/VOAGC3.i/602/11-01-99/01nov99.b/602_99.m

Sample Info : ISTD020

Lab ID : ISTD020

Inj Date : 01-NOV-1999 09:41

Operator : SP

Cpnd Sublist: all

Inst ID : VOAGC3.i

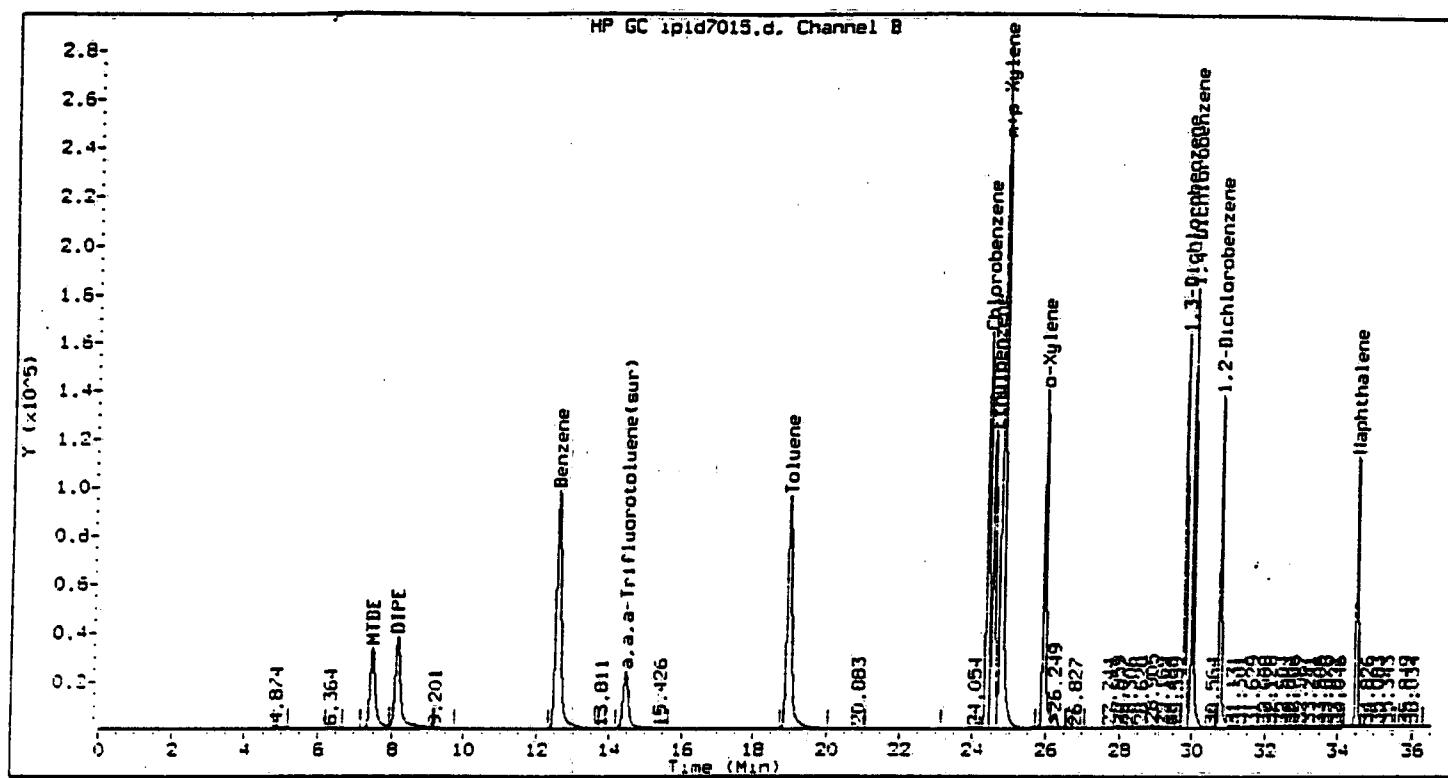
Dil Factor : 1

Sample Matrix : WATER

Sample Type: CALIB_4

Compounds	RT	EXP RT	DIL RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
o-Xylene	25.936	25.936	0.000	2758649	20.000 20.000
m,p-Xylene	24.769	24.769	0.000	4073906	40.000 40.000
TBA	6.612	6.712	0.101	878394	2000.000 2000.000
MTBE	7.477	7.477	0.000	918322	20.000 20.000
DIPE	8.163	8.163	0.000	1113012	20.000 20.000
Benzene	12.569	12.569	0.000	2424400	20.000 20.000
Toluene	18.967	18.967	0.000	2132128	20.000 20.000
Chlorobenzene	24.381	24.381	0.000	2171851	20.000 20.000
Ethylbenzene	24.547	24.547	0.000	1747142	20.000 20.000

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
					(ug/L)	(ug/L)
Xylene (Total)	25.019	25.019	0.000	5832555	60.000	60.000
1,3-Dichlorobenzene	29.771	29.771	0.000	1608792	20.000	20.000
1,4-Dichlorobenzene	29.984	29.984	0.000	1929041	20.000	20.000
1,2-Dichlorobenzene	30.743	30.743	0.000	1387435	20.000	20.000
Naphthalene	34.518	34.518	0.000	1205693	20.000	20.000
a,a,a-Trifluorotoluene(sur)	14.459	14.459	0.000	1325407	30.000	30.000



Method : /chem/VOAGC3.i/602/11-01-99/01nov99.b/602_99.m

Sample Info : ISTD040

Lab ID : ISTD040

Inst ID : VOAGC3.i

Inj Date : 01-NOV-1999 10:38

Dil Factor : 1

Operator : SP

Sample Matrix : WATER

Cpnd Sublist: all

Sample Type: CALIB_5

Compounds	RT	EXP RT	DLT RT	CONCENTRATIONS	
				ON-COLUMN	FINAL
o-Xylene	25.934	25.936	0.002	3545853	39.203 39.203
m,p-Xylene	24.767	24.769	0.002	8245413	78.142 78.142
MTBE	7.476	7.477	0.001	1768438	39.072 39.072
DIPE	8.160	8.163	0.004	2226647	41.308 41.308
Benzene	12.566	12.569	0.004	4928945	40.789 40.789
Toluene	18.964	18.967	0.003	4359517	39.883 39.883
Chlorobenzene	24.379	24.381	0.002	4327726	38.170 38.170
Styrene	24.545	24.547	0.002	3542731	39.982 39.982
Xylene (Total)	25.019	25.019	0.000	11791266	117.332 117.332

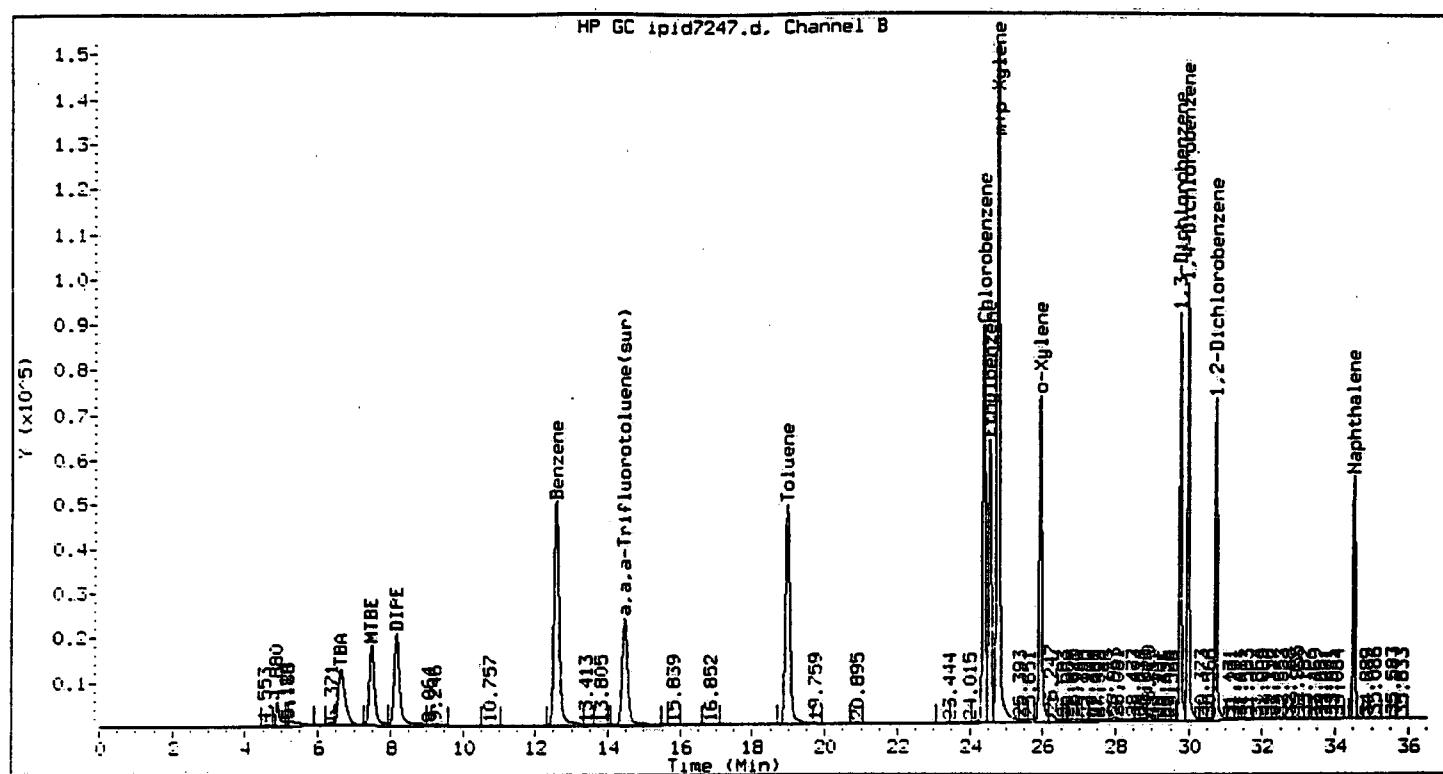
Compounds	CONCENTRATIONS					
	RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
1,3-Dichlorobenzene	29.768	29.771	0.003	3239945	41.130	41.130
1,4-Dichlorobenzene	29.981	29.984	0.003	3829406	35.242	35.242
1,2-Dichlorobenzene	30.739	30.743	0.004	2837827	41.757	41.757
Naphthalene	34.515	34.518	0.003	2232614	39.658	39.658
a,a,a-Trifluorotoluene(sur)	14.456	14.459	0.004	1339201	30.785	30.785

VOLATILE ORGANICS CONTINUING CALIBRATION CHECK

Instrument ID: VOAGC3 Calibration Date: 11/17/99 Time: 0752
 Lab File ID: IPID7247 Init. Calib. Date(s): 11/01/99 11/01/99
 Heated Purge: (Y/N) N Init. Calib. Times: 0741 1118

COMPOUND	RRF	RRF20	MIN RRF	%D	MAX %D
TBA **	440.88	429.27		2.6	50.0
MTBE	45757.55	45003.35		1.6	50.0
DIPE	53649.84	56431.50		-5.0	50.0
Benzene	119581.94	123904.05		-3.6	23.0
Toluene	108169.18	107981.50		0.2	22.5
Chlorobenzene	106800.68	116775.55		-9.3	19.5
Ethylbenzene	86678.86	89279.80		-3.0	37.0
Xylene (Total)	96971.53	103099.45		-6.3	50.0
1,3-Dichlorobenzene	78163.54	89072.90		-13.8	27.5
1,4-Dichlorobenzene	95158.56	96213.10		-1.1	30.5
1,2-Dichlorobenzene	67881.51	71939.60		-5.8	32.0
Naphthalene	59019.92	54902.95		7.0	50.0
a,a,a-Trifluorotoluene(sur)	43751.58	43919.60		-0.0	22.0

** TBA Continuing Calibration Level is RF2000.



Method : /chem/VOAGC3.i/602/11-01-99/17nov99.b/602_99.m

Sample Info : ISTD020

Lab ID : ISTD020

Inj Date : 17-NOV-1999 07:52

Operator : SP

Cpnd Sublist: all

Inst ID : VOAGC3.i

Dil Factor : 1

Sample Matrix : WATER

Sample Type: CCALIB_4

CONCENTRATIONS

ON-COLUMN FINAL

Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
o-Xylene	25.939	25.939	0.000	1870031	21.460	21.460
m,p-Xylene	24.773	24.773	0.000	4315936	42.360	42.360
TBA	6.633	6.633	0.000	858533	1947.339	1947.339
MTBE	7.496	7.486	0.000	900067	19.670	19.670
DIPE	8.170	8.170	0.000	1128630	21.037	21.037
Benzene	12.577	12.577	0.000	2478081	20.723	20.723
Toluene	18.973	18.973	0.000	2159630	19.965	19.965
Chlorobenzene	24.385	24.385	0.000	2335511	21.868	21.868
Ethylbenzene	24.551	24.551	0.000	1785596	20.600	20.600

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
	(ug/L)	(ug/L)				
Xylene (Total)	25.019	25.019	0.000	6185967	63.792	63.792
1,3-Dichlorobenzene	29.771	29.771	0.000	1781458	22.791	22.791
1,4-Dichlorobenzene	29.984	29.984	0.000	1924262	20.222	20.222
1,2-Dichlorobenzene	30.741	30.741	0.000	1438792	21.196	21.196
Naphthalene	34.517	34.517	0.000	1098059	18.605	18.605
a,a,a-Trifluorotoluene(sur)	14.466	14.466	0.000	1317588	30.115	30.115

VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Matrix: WATER

Level: LOW

Lab Job No: V250

	LAB SAMPLE NO.	SMC1 #	SMC2 #	OTHER	TOT OUT
	=====	=====	=====	=====	=====
01	IG321	93			0
02	169024	97			0
03	169025	98			0
04	169027	97			0
05	169028	96			0
06	169029	96			0
07	169025MS	99			0
08	169025MSD	100			0
09	HG326	100			0
10	169026	98			0
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

QC LIMITS

SMC1 = a,a,a-Trifluorotoluene (72-127)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

VOLATILE SPIKE RECOVERY SUMMARY
METHOD 602

Matrix: WATER

Matrix Spike - Lab Sample No.: 169025

Level: LOW

MS Sample from Lab Job No: V250

QA Batch: 6909

Compound	MS % REC.	BS % REC.	LIMITS
Benzene	100	100	39-150
Toluene	95	95	46-148
Chlorobenzene	100	105	55-135
Ethylbenzene	90	100	32-160
1,3-Dichlorobenzene	100	110	50-141
1,4-Dichlorobenzene	96	100	42-143
1,2-Dichlorobenzene	99	100	37-154

* Values outside of QC limits

Spike Recovery: 0 out of 14 outside limits

COMMENTS: _____